UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY AND POLLUTION PREVENTION

MEMORANDUM

DATE: **October 8, 2014**

SUBJECT: **Chemicals Evaluated for Carcinogenic Potential by the Office of Pesticide Programs**

FROM: **Brenda May, Chief**
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TO: **Division Directors AD, BPPD, EFED, FEAD, HED, RD and PRD**

The attached list provides an overview of chemicals evaluated for carcinogenic potential by the Health Effects Division (HED) of the Office of Pesticide Programs (OPP) through September 2014. Applying the Agency's Guidelines for Carcinogen Risk Assessment, the classification of the chemical is made by HED's Cancer Assessment Review Committee (CARC) or, in the case of where there is no evidence of carcinogenicity, by the HED Risk Assessment Team.

This list includes the chemical name, CAS Number, PC code, the cancer classification, report date, test species and tumor type(s) as well as method of quantification of cancer risk and established mode of action, as applicable.

It should be noted that the evaluation of many of these chemicals is an ongoing process, therefore, the information in this list (i.e., classification and/or the quantification) may be subject to change as new and/or additional data are submitted to OPP. This list should not be used as the single source for either the classification or quantification of the carcinogenic potential. This list will be updated annually.

If further information is required please contact me (Phone: 703-308-6175; E-mail: may.brenda@epa.gov).

Chemicals Evaluated for Carcinogenic Potential
Science Information Management Branch
Health Effects Division
Office of Pesticide Programs
U.S. Environmental Protection Agency

BACKGROUND

What is this list?

The Chemicals Evaluated for Carcinogenic Potential provides an overview of the compounds evaluated for carcinogenicity by the Health Effects Division of the Office of Pesticide Programs.

NOTE: As new information becomes available, the list may become out-of-date. Therefore, it should not be used as the sole reference regarding the carcinogenic potential for a pesticide. EPA intends to update the list each year to include new evaluations or re-evaluations.

How does EPA review pesticides for potential carcinogenicity?

The Health Effects Division of the Office of Pesticide Programs performs an independent review of studies conducted in mice and rats to evaluate the carcinogenic potential of pesticides. The results of the independent review are peer-reviewed by the Cancer Assessment Review Committee. This committee recommends a cancer classification. The classification will determine how the Agency regulates the pesticide and will include methods for quantification of human risk. In some cases, EPA also requests review by the FIFRA Scientific Advisory Panel.

What factors does EPA consider in its review of cancer risk?

When assessing possible cancer risk posed by a pesticide, EPA considers how strongly carcinogenic the chemical is (its potency) and the potential for human exposure. The pesticides are evaluated not only to determine if they cause cancer in laboratory animals, but also as to their potential to cause human cancer. For any pesticide classified as a potential carcinogen, the risk would depend on the extent to which a person might be exposed (how much time and to what quantity of the pesticide). The factors considered include short-term studies, long-term cancer studies, mutagenicity studies, and structure activity concerns. (The term “weight-of-the-evidence” is used in referring to such a review. This means that the recommendation is not based on the results of one study, but on the results of all studies that are available.)

When does EPA review pesticides for potential carcinogenicity?

EPA reviews studies submitted when a pesticide is proposed for registration. Studies are required in two species (mice and rats) and two sexes (males and females). These studies are required for all pesticides used on food and some non-food pesticides that could lead to long-term exposures in humans. These studies may be reviewed again when a pesticide undergoes reregistration and the cancer classification may be reevaluated, particularly if new studies have been submitted.

Why are there several different cancer classifications in the list?

EPA's guidelines for evaluating the potential carcinogenicity of chemicals have been updated over the years to reflect increased understanding of ways chemicals may cause cancer. The current guidelines call for greater emphasis on characterization discussions for hazard, dose-response assessment, exposure assessment, and risk characterization, as well as the use of mode of action in the assessment of potential carcinogenesis.

EPA does not have the resources to re-evaluate every chemical to determine how it would be described under new guidelines, and there is no reason to re-evaluate chemicals unless there is some new information that could change the basic understanding of that chemical.

How have the guidelines changed?

EPA issued its first set of principles to guide evaluation of human cancer potential in1976. In 1986, EPA issued updated guidance, which included a letter system (A-E) for designating degree of carcinogenic potential. In the 1986 guidelines, hazard identification and the weight-of evidence process focused on tumor findings. The human carcinogenic potential of agents was characterized by a six-category alphanumeric classification system (A, B1, B2, C, and D). In 1996, EPA released "Proposed Guidelines for Carcinogen Risk Assessment," which used descriptive phrases rather than the alphanumeric classification to classify carcinogenic potential. In the 1996 classification structure, increased emphasis was placed on discussing characterization of hazard, dose-response, and exposure assessments. The hazard and weight of evidence process embraced an analysis of all relevant biological information and emphasized understanding the agent's mode of action in producing tumors to reduce the uncertainty in describing the likelihood of harm. By 1999, the science related to carcinogens had advanced significantly. EPA issued draft guidelines that continued the greater emphasis on characterization discussions for hazard, dose-response assessment, exposure assessment, risk characterization and the use of mode of action in the assessment of potential carcinogenesis. In addition, the guidelines included consideration of risk to children, as well as addressing other issues such as nuances related to the amount and adequacy of data on a chemical.

In March, 2005, EPA released its final *Guidelines for Carcinogen Risk Assessment* (EPA/630/P-03/001B). These guidelines represent the culmination of a long development process, replacing EPA's original cancer risk assessment guidelines (1986) and its interim final guidelines (1999). http://www.epa.gov/cancerguidelines/

How do the different designations compare?

The short answer is that they cannot be directly compared. Each system designation refers to the reviews and criteria it contains. A substance that is, for example, a “C” in the 1986 system may not be directly translatable to any particular category in the later systems. The designation for any substance must be considered in the context of the system under which it was reviewed.

A list of the descriptors from the various classification systems and their definitions are given on the following pages.

Carcinogenicity Classification of Pesticides:
Derivation and Definition of Terms

CLASSIFICATION-2005

The following descriptors from the 2005 Guidelines for Carcinogen Risk Assessment can be used as an introduction to the weight of evidence narrative in the cancer risk assessment. The examples presented in the discussion of the descriptors are illustrative. The examples are neither a checklist nor a limitation for the descriptor. The complete weight of evidence narrative, rather than the descriptor alone, provides the conclusions and the basis for them.

CARCINOGENIC TO HUMANS. This descriptor indicates strong evidence of human carcinogenicity. It covers different combinations of evidence.

- This descriptor is appropriate when there is convincing epidemiologic evidence of a causal association between human exposure and cancer.
- Exceptionally, this descriptor may be equally appropriate with a lesser weight of epidemiologic evidence that is strengthened by other lines of evidence. It can be used when all of the following conditions are met: (a) there is strong evidence of an association between human exposure and either cancer or the key precursor events of the agent's mode of action but not enough for a causal association, and (b) there is extensive evidence of carcinogenicity in animals, and (c) the mode(s) of carcinogenic action and associated key precursor events have been identified in animals, and (d) there is strong evidence that the key precursor events that precede the cancer response in animals are anticipated to occur in humans and progress to tumors, based on available biological information. In this case, the narrative includes a summary of both the experimental and epidemiologic information on mode of action and also an indication of the relative weight that each source of information carries, e.g., based on human information, and based on limited human and extensive animal experiments.

LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is appropriate when the weight of the evidence is adequate to demonstrate carcinogenic potential to humans but does not reach the weight of evidence for the descriptor “Carcinogenic to Humans.” Adequate evidence consistent with this descriptor covers a broad spectrum. As stated previously, the use of the term “likely” as a weight of evidence descriptor does not correspond to a quantifiable probability. The examples below are meant to represent the broad range of data combinations that are covered by this descriptor; they are illustrative and provide neither a checklist nor a limitation for the data that might support use of this descriptor.
Moreover, additional information, e.g., on mode of action, might change the choice of descriptor for the illustrated examples. Supporting data for this descriptor may include:

- an agent demonstrating a plausible (but not definitively causal) association between human exposure and cancer, in most cases with some supporting biological, experimental evidence, though not necessarily carcinogenicity data from animal experiments;

- an agent that has tested positive in animal experiments in more than one species, sex, strain, site, or exposure route, with or without evidence of carcinogenicity in humans;
- a positive tumor study that raises additional biological concerns beyond that of a statistically significant result, for example, a high degree of malignancy, or an early age at onset;
- a rare animal tumor response in a single experiment that is assumed to be relevant to humans; or
- a positive tumor study that is strengthened by other lines of evidence, for example, either plausible (but not definitively causal) association between human exposure and cancer or evidence that the agent or an important metabolite causes events generally known to be associated with tumor formation (such as DNA reactivity or effects on cell growth control) likely to be related to the tumor response in this case.

SUGGESTIVE EVIDENCE OF CARCINOGENIC POTENTIAL. This descriptor of the database is appropriate when the weight of evidence is suggestive of carcinogenicity; a concern for potential carcinogenic effects in humans is raised, but the data are judged not sufficient for a stronger conclusion. This descriptor covers a spectrum of evidence associated with varying levels of concern for carcinogenicity, ranging from a positive cancer result in the only study on an agent to a single positive cancer result in an extensive database that includes negative studies in other species. Depending on the extent of the database, additional studies may or may not provide further insights. Some examples include:

- a small, and possibly not statistically significant, increase in tumor incidence observed in a single animal or human study that does not reach the weight of evidence for the descriptor "Likely to Be Carcinogenic to Humans." The study generally would not be contradicted by other studies of equal quality in the same population group or experimental system (see discussions of *conflicting evidence* and *differing results*, below);
- a small increase in a tumor with a high background rate in that sex and strain, when there is some but insufficient evidence that the observed tumors may be due to intrinsic factors that cause background tumors and not due to the agent being assessed. (When there is a high background rate of a specific tumor in animals of a particular sex and strain, then there may be biological factors operating independently of the agent being assessed that could be responsible for the development of the observed tumors.) In this case, the reasons for determining that the tumors are not due to the agent are explained;
- evidence of a positive response in a study whose power, design, or conduct limits the ability to draw a confident conclusion (but does not make the study fatally flawed), but where the carcinogenic potential is strengthened by other lines of evidence (such as structure-activity relationships); or
- a statistically significant increase at one dose only, but no significant response at the other doses and no overall trend.

INADEQUATE INFORMATION TO ASSESS CARCINOGENIC POTENTIAL. This descriptor of the database is appropriate when available data are judged inadequate for applying one of the other descriptors. Additional studies generally would be expected to provide further insights. Some examples include:

- little or no pertinent information;
- conflicting evidence, that is, some studies provide evidence of carcinogenicity but other studies of equal quality in the same sex and strain are negative. Differing results, that is, positive results in some studies and negative results in one or more different experimental

systems, do not constitute *conflicting evidence,* as the term is used here. Depending on the overall weight of evidence, differing results can be considered either suggestive evidence or likely evidence; or

- negative results that are not sufficiently robust for the descriptor, “Not Likely to Be Carcinogenic to Humans.”

NOT LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is appropriate when the available data are considered robust for deciding that there is no basis for human hazard concern. In some instances, there can be positive results in experimental animals when there is strong, consistent evidence that each mode of action in experimental animals does not operate in humans. In other cases, there can be convincing evidence in both humans and animals that the agent is not carcinogenic. The judgment may be based on data such as:

- animal evidence that demonstrates lack of carcinogenic effect in both sexes in well-designed and well-conducted studies in at least two appropriate animal species (in the absence of other animal or human data suggesting a potential for cancer effects),
- convincing and extensive experimental evidence showing that the only carcinogenic effects observed in animals are not relevant to humans,
- convincing evidence that carcinogenic effects are not likely by a particular exposure route (see Section 2.3), or
- convincing evidence that carcinogenic effects are not likely below a defined dose range.

A descriptor of “not likely” applies only to the circumstances supported by the data. For example, an agent may be “Not Likely to Be Carcinogenic” by one route but not necessarily by another. In those cases that have positive animal experiment(s) but the results are judged to be not relevant to humans, the narrative discusses why the results are not relevant.

MULTIPLE DESCRIPTORS. More than one descriptor can be used when an agent's effects differ by dose or exposure route. For example, an agent may be “Carcinogenic to Humans” by one exposure route but “Not Likely to Be Carcinogenic” by a route by which it is not absorbed. Also, an agent could be “Likely to Be Carcinogenic” above a specified dose but “Not Likely to Be Carcinogenic” below that dose because a key event in tumor formation does not occur below that dose.

CLASSIFICATION -1999 Draft

The terms used to describe carcinogenic potential in the July 1999 "Review Draft of the Guidelines for Carcinogen Risk Assessment" are listed and defined as follows:

CARCINOGENIC TO HUMANS. This descriptor is appropriate when there is convincing epidemiologic evidence demonstrating causality between human exposure and cancer. This descriptor is also appropriate when there is an absence of conclusive epidemiologic evidence to clearly establish a cause and effect relationship between human exposure and cancer, but there is compelling evidence of carcinogenicity in animals and mechanistic information in animals and humans demonstrating similar mode(s) of carcinogenic action. It is used when all of the following conditions are met:

- There is evidence in a human population(s) of association of exposure to the agent with cancer, but not enough to show a causal association, and
- There is extensive evidence of carcinogenicity, and
- The mode(s) of carcinogenic action and associated key events have been identified in animals, and
- The keys events that precede the cancer response in animals have been observed in the human population(s) that also shows evidence of an association of exposure to the agent with cancer.

LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is appropriate when the available tumor effects and other key data are adequate to demonstrate carcinogenic potential to humans. Adequate data are within a spectrum. At one end is evidence for an association between human exposure to the agent and cancer and strong experimental evidence of carcinogenicity in animals; at the other, with no human data, the weight of experimental evidence shows animal carcinogenicity by a mode or modes of action that are relevant or assumed to be relevant to humans.

SUGGESTIVE EVIDENCE OF CARCINOGENICITY, BUT NOT SUFFICIENT TO ASSESS HUMAN CARCINOGENIC POTENTIAL. This descriptor is appropriate when the evidence from human or animal data is suggestive of carcinogenicity, which raises a concern for carcinogenic effects but is judged not sufficient for a conclusion as to human carcinogenic potential. Examples of such evidence may include: a marginal increase in tumors that may be exposure-related, or evidence is observed only in a single study, or the only evidence is limited to certain high background tumors in one sex of one species. Dose-response assessment is not indicated for these agents. Further studies would be needed to determine human carcinogenic potential.

DATA ARE INADEQUATE FOR AN ASSESSMENT OF HUMAN CARCINOGENIC POTENTIAL. This descriptor is used when available data are judged inadequate to perform an assessment. This includes a case when there is a lack of pertinent or useful data or when existing evidence is conflicting, e.g., some evidence is suggestive of carcinogenic effects, but other equally pertinent evidence does not confirm a concern.

NOT LIKELY TO BE CARCINOGENIC TO HUMANS. This descriptor is used when the available data are considered robust for deciding that there is no basis for human hazard concern. The judgment may be based on:

- Extensive human experience that demonstrates lack of carcinogenic effect (e.g., phenobarbital).
- Animal evidence that demonstrates lack of carcinogenic effect in at least two well- designed and well-conducted studies in two appropriate animal species (in the absence of human data suggesting a potential for cancer effects).
- Extensive experimental evidence showing that the only carcinogenic effects observed in animals are not considered relevant to humans (e.g., showing only effects in the male rat kidney due to accumulation of $alpha_{2u}$-globulin).
- Evidence that carcinogenic effects are not likely by a particular route of exposure.
- Evidence that carcinogenic effects are not anticipated below a defined dose range.

CLASSIFICATION-1996

In April 1996, EPA released the “Proposed Guidelines for Carcinogen Risk Assessment.” This scheme varied from the earlier 1986 scheme in that it used descriptors rather than letters to classify carcinogenic potential. The descriptors are:

KNOWN/LIKELY. This category of descriptors is appropriate when the available tumor effects and other key data are adequate to convincingly demonstrate carcinogenic potential for humans.

CANNOT BE DETERMINED. This category of descriptors is appropriate when available tumor effects or other key data are suggestive or conflicting or limited in quantity and, thus, are not adequate to convincingly demonstrate carcinogenic potential for humans. In general, further agent specific and generic research and testing are needed to be able to describe human carcinogenic potential.

NOT LIKELY. This is the appropriate descriptor when experimental evidence is satisfactory for deciding that there is no basis for human hazard concern, as follows (in the absence of human data suggesting a potential for cancer effects).

CLASSIFICATION -1986

The following cancer classification scheme was first introduced in 1986. It was used until 1996.

GROUP A-HUMAN CARCINOGEN. This group is used only when there is sufficient evidence from epidemiologic studies to support a causal association between exposure to the agents and cancer.

GROUP B-PROBABLE HUMAN CARCINOGEN. This group includes agents for which the weight of evidence of human carcinogenicity based on epidemiologic studies is "limited" and also includes agents for which the weight of evidence of carcinogenicity based on animal studies is "sufficient." The group is divided into two subgroups. **Group B1** is reserved for agents for which there is limited evidence of

carcinogenicity from epidemiologic studies. **Group B2** is used for Agents for which there is "sufficient: evidence from animal studies and for which there is “inadequate evidence" or "no data" from epidemiologic studies.

GROUP C-POSSIBLE HUMAN CARCINOGEN. This group is used for agents with limited evidence of carcinogenicity in animals in the absence of human data.

GROUP D-NOT CLASSIFIABLE AS TO HUMAN CARCINOGENICITY. This group is generally used for agents with inadequate human and animal evidence of carcinogenicity or for which no data are available.

GROUP E-EVIDENCE OF NON-CARCINOGENICITY FOR HUMANS. This group is used for agents that show no evidence for carcinogenicity in at least two adequate animal tests in different species or in both adequate epidemiologic and animal studies.

OTHER DEFINITIONS
Quantification of Cancer Risk - Carcinogenic Potency Factor (Q_1*)

Q_1 STAR (Q_1*) - In the classification of human or probable-human carcinogens, mathematical models are used to estimate an upper-bound excess cancer risk associated with lifetime ingestion in the diet. The data used in these estimates usually come from lifetime exposure studies in animals. The USEPA generally uses the linearized multistage model for its cancer risk assessment. This model fits linear dose-response curves to low doses and is consistent with a no-threshold model of carcinogenesis, i.e., exposure to even a very small amount of the substance produces a finite increased risk of cancer.

The linearized multistage model uses dose-response data from the most appropriate carcinogenic study to calculate a carcinogenic potency factor (q_1*) for humans. The q_1* is then used to determine the concentrations of the chemical in the diet that are associated with theoretical upperbound excess lifetime cancer risks of 1 in 10,000, 1 in 100,000, and 1 in 1,000,000 (10^{-4}, 10^{-5}, 10^{-6} respectively) individuals over a lifetime of exposure.

Mode of Action (MOA) - The key cellular and biochemical events that have to happen for a biological effect to develop. Mode of action is contrasted with mechanism of action which is a more complete understanding of the step by step pathway leading to a biological effect. Some established MOAs include:

Androgen Dependent - The chemical disrupts the normal levels of reproductive hormones (e.g., testosterone, luteinizing hormone) which in turn stimulates the target tissue (e.g., leydig cells, testicular tissue) to divide which may lead to hyperplasia and neoplasia. For agents to pose a hazard to humans by this MOA, sufficient exposure levels need to be encountered which produce the same level of biological effect as seen in rodents. This is consistent with the MOA for Leydig cell tumorigenesis.

Cytotoxicity and Regenerative Proliferation - Continuous exposure to a chemical or its metabolite causes persistent cell killing which in turn may result in a persistent regenerative proliferative response in the damaged tissue. For irreversible tissue alterations to occur in humans, including cancer by this mode of action, a sufficient exposure must be encountered over a prolonged period.

Mitogenesis - Mitogenic chemicals act by promoting the clonal expansion of preneoplastic cells by stimulating cell proliferation. This mode of action is frequently found in the rodent liver where it is generally associated with an increase in metabolizing enzymes. A mitogenic chemical stimulates cell proliferation in the target organ without obvious cytotoxicity or cell death. Another important feature of this MOA is that the mitogenic effect is not persistent over time; instead it is resolved and then is manifested within proliferative foci which are considered preneoplastic lesions. Through continuous exposure, it is these preneoplastic lesions that develop into tumors. At this time, the adverse health effects caused by this MOA are presumed to be relevant to humans.

Mutagenesis - The chemical or a metabolite has the ability to react with or bind DNA in a manner that causes mutations. It is usually positive in multiple test systems for different genetic endpoints (particularly gene mutations and structural chromosome aberrations) and in tests performed *in vivo* and *in vitro*. Adverse health effects in rodents from these chemicals are considered relevant for human health risk.

Neuroendrocrine Disruption - Chemicals that disrupt hypothalamic control of pituitary function leading to a decrease in hormone release (e.g., luteinizing hormone) and the disruption of the ovarian cycle. This may result in an increase in cell proliferation in the mammary gland due to a hyperstimulation by estrogen. In the case of chloro-s-triazines, this neuroendocrine MOA is not considered relevant to humans because it depends on a rodent specific reproductive process.

PPAR-alpha Agonism - Chemicals that bind to and activate the Peroxisome Proliferator-Activated Receptor (PPAR) stimulate biological responses in the liver (e.g., peroxisome proliferation, induction of lipid metabolizing enzymes, oxidative stress, and hepatocyte mitogenesis). Activation of PPAR–alpha results in an increase in cell proliferation and clonal expansion of preneoplastic foci in the liver. While the human relevance of this MOA has not been definitively determined, most of the evidence indicates that this mode of action is not operative in the human liver.

Thyroid Hormone Disruption - Disruption of normal levels of thyroid hormones may lead to an increase of thyroid stimulating hormone (TSH) which results in an increase in cell proliferation of the thyroid gland. If exposure is continuous in the animal, thyroid follicular cell tumors can potentially develop. However, the development of thyroid cancer by this mode of action in humans is considered unlikely since prolonged stimulation of the thyroid gland by TSH has not been associated with tumorigenesis in humans. However, this MOA is relevant as an indicator for potential noncancer health effects (e.g., goiter, neurodevelopmental, etc) due thyroid disruption in humans.

Chemicals Evaluated for Carcinogenic Potential

Science Information Management Branch

Health Effects Division

Office of Pesticide Programs

U.S. Environmental Protection Agency

CHEMICAL	CAS NO.	PC CODE	CANCER CLASSIFICATION	REPORT DATE	QUANTIFICATION METHOD	TUMOR SITES/ STRAIN/ SPECIES/ SEX
1,3-Dibromo-5,5-dimethylhydantoin	77-48-5	006317	Not Likely To Be Carcinogenic To Humans	8/28/2000	NR	Not Applicable
1,3-dichloro-5-methylhydantoin	89415-87-2	128826	Not Likely to Be Carcinogenic to Humans	8/28/2000	NR	Not Applicable
2, 4 - DBA	94-82-6	030801	Not Likely to Be Carcinogenic to Humans	6/13/2003	NR	Not Applicable
2,4-D + Salts & Esters	94-75-7	030001	Group D--Not Classifiable as to Human Carcinogenicity	1/29/1997	NR	Not Applicable
2,4-D Choline	1048373-72-3	051505	Group D--Not Classifiable As To Human Carcinogenicity	10/27/2011	NR	Not Applicable
2-Benzyl-4-chlorophenol	120-32-1	062201	Group C--Possible Human Carcinogen	9/5/1995	RfD Approach	Kidney tumors in B6C3F1 mice (M) Kidney tumors in F344/N rats (F)
4-aminopyridine	504-24-5	069201	Group D--Not Classifiable As To Human Carcinogenicity	8/6/2007	NR	Not Applicable
Acephate	30560-19-1	103301	Group C--Possible Human Carcinogen	5/8/1985	NR	Liver tumors in CD-1 mice (F)
Acequinocyl	57960-19-7	006329	Not Likely to Be Carcinogenic to Humans	11/13/2003	NR	Not Applicable
Acetamide	63114-77-2	111101	Group C--Possible Human Carcinogen	5/29/1990	NR	Liver tumors in Wistar rats (M) Liver tumors in F344 rats (M & F)
Acetamiprid	135410-20-7	099050	Not Likely to Be Carcinogenic to Humans	12/11/2001	NR	Not Applicable

CHEMICAL	CAS NO.	PC CODE	CANCER CLASSIFICATION	REPORT DATE	QUANTIFICATION METHOD	TUMOR SITES/ STRAIN/ SPECIES/ SEX
Acetochlor	34256-82-1	121601	Suggestive Evidence of Carcinogenic Potential	1/3/2007	RfD Approach	Lung tumors in CD- 1 mice (M & F) Ovarian tumors in CD-1 mice (F); Established a cytotoxic (secondary to oxidative damage by a reactive quinone imine intermediate) mode of action for the nasal olfactory epithelial tumors and a hormonal mode of action for
Acibenzolar-S-methyl	135158-54-2	061402	Not Likely to Be Carcinogenic to Humans	12/9/1999	NR	Not Applicable
Acifluorfen sodium	62476-59-9	114402	Likely to be Carcinogenic to Humans at High Doses Not Likely to be Carcinogenic to Humans at Low Doses	7/9/2003	MOE Approach	Liver tumors in B6C3F1 (M & F) Liver tumors in CD-1 mice (M & F); Established a PPARa mode of action for liver tumors in mice
Acrinathrin	101007-06-1	129141	Group D--Not Classifiable as to Human Carcinogenicity	7/15/1996	NR	Not Applicable
ADBAC	68424-85-1	069105	Not Likely to Be Carcinogenic to Humans	12/8/1999	NR	Not Applicable
Alachlor	15972-60-8	090501	Likely to be Carcinogenic to Humans (High Doses); Not Likely to be Carcinogenic to Humans (Low Doses)	6/27/1997	MOE Approach	Tumors at multiple sites (Stomach, Nose & Thyroid) in Long Evans rats (M & F); Established a thyroid hormonal mode of action for thyroid tumors in rats.
Aldicarb	116-06-3	098301	Group E--Evidence of Non-carcinogenicity for Humans	7/17/2002	NR	Not Applicable
Alpha-Cypermethrin	67375-30-8	209600	Group C--Possible Human Carcinogen	09/11/12	NR	Lung tumors in Alderly Park SPF Swiss mice (F)
Ametryn	834-12-8	080801	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	9/17/2004	NR	Not Applicable
Amicarbazone	129909-90-6	114004	Not Likely To Be Carcinogenic To Humans	8/10/2005	NR	Not Applicable
Aminocyclopyrachlor	858956-08-8, 858956-35-1, 858954-83-3, 124423-84-3, 1759-53-1	288008	Not Likely To Be Carcinogenic To Humans	11/9/2011	NR	Not applicable
Aminopyralid	150114-71-9	005100	Not Likely To Be Carcinogenic To Humans	7/12/2005	NR	Not Applicable
Amisulbrom	348635-87-0	016330	Suggestive Evidence Of Carcinogenic Potential	12/2/2010	NR	CD-1 Mouse (M) Liver; Wistar Rat Liver (M & F); Wistar Rat Forestomach (F)

CHEMICAL	CAS NO.	PC CODE	CANCER CLASSIFICATION	REPORT DATE	QUANTIFICATION METHOD	TUMOR SITES/ STRAIN/ SPECIES/ SEX
Amitraz	33089-61-1	106201	Suggestive Evidence of Carcinogenic Potential	7/18/2006	NR	Lymphoreticular tumors in CFLP mice (F) Liver tumors in B6C3F1 mice (F) Lung tumors B6C3F1 mice (M)
Amitrole	61-82-5	004401	Not Likely To Be Carcinogenic To Humans At Doses That Do Not Alter Rat Thyroid Hormone Homeostasis	5/11/2006	NR	Thyroid in Charworth Farms rats (M), Fischer 344 rats (M) & Wistar rats (M & F); Established a thyroid hormonal mode of action for thyroid tumors.
Anthraquinone	84-65-1	122701	Likely To Be Carcinogenic To Humans	10/31/12	Q1* = 6.17 X 10E-2 based on male mouse liver tumors combined	Kidney in F344/N Rat (F); Liver in B6C3F1 Mouse (M & F); Thyroid in B6C3F1 Mouse (M & F); N/A
Aquashade	2650-18-2	110301	Not Likely To Be Carcinogenic To Humans	9/27/2005	NR	Not Applicable
Asulam	3337-71-1	106901	Group C--Possible Human Carcinogen	12/6/2001	NR	Thyroid & Adrenal tumors in Sprague-Dawley rats (M)
Atrazine	1912-24-9	080803	Not Likely to be Carcinogenic to Humans	12/13/2000	NR	Mammary and pituitary tumors in female SD rat.; Established a neuroendocrine disruption mode of action for mammary and pituitary tumors in rats.
Avermectin (see Emamectin Benzoate)	65195-55-3	122804	Group E--Evidence of Non-carcinogenicity for humans	6/27/1996	NR	Not Applicable
Azafenidin	68049-83-2	119016	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	10/18/1999	NR	Not Applicable
Azinphos-methyl	86-50-0	058001	Not Likely to Be Carcinogenic to Humans	4/20/1998	NR	Not Applicable
Azoxystrobin	131860-33-8	128810	Not Likely to Be Carcinogenic to Humans	1/14/1997	NR	Not Applicable
Bendiocarb	22781-23-3	105201	Group E--Evidence of Non-carcinogenicity for Humans	12/16/1997	NR	Not Applicable
Benfluralin	1861-40-1	084301	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	12/27/2001	NR	Liver tumors in B6C3F1 mice (F)
Benomyl	17804-35-2	099101	Group C--Possible Human Carcinogen	9/21/2000	Q1* = 2.39 E-3 (3/4)	Liver tumors in CD-1 mice (M &F) Liver tumors in Swiss SPF mice (M & F)
Bensulide	741-58-2	009801	Not Likely to Be Carcinogenic to Humans	6/10/1999	NR	Not Applicable

CHEMICAL	CAS NO.	PC CODE	CANCER CLASSIFICATION	REPORT DATE	QUANTIFICATION METHOD	TUMOR SITES/ STRAIN/ SPECIES/ SEX
Bentazon	25057-89-0	275200	Group E--Evidence of Non-carcinogenicity for Humans	1/14/1992	NR	Not Applicable
Benthiavalicarb-isopropyl	177406-68-7	098379	Likely to be Carcinogenic to Humans	10/18/2005	Q1* = 6.2795 E-2 (3/4)	Liver tumors in B6C3F1 Mice (M &F) Thyroid tumors in B6C3F1 Mice (M) Uterine tumors in Fisher 344 Rat (F)
Benzyl Benzoate	120-51-4	009501	Not Likely To Be Carcinogenic To Humans	6/28/2007	NR	Not Applicable
Beta Cyfluthrin	68359-37-5	118831	Not Likely To Be Carcinogenic To Humans	1/27/2010	NR	Not Applicable
Bicyclopyrone	365400-11-9	018986	Suggestive Evidence Of Carcinogenic Potential	09/10/2014	RfD Approach	Ocular tumors in Han Wistar Rat (M)
Bifenazate	149877-41-8	000586	Not Likely to Be Carcinogenic to Humans	8/28/2001	NR	Not Applicable
Bifenthrin	82657-04-3	128825	Group C--Possible Human Carcinogen	2/19/2003	RfD Approach	Urinary bladder & Liver tumors (M) and Lung tumors (F) in Swiss Webster mice
Bioallethrin	584-79-2	004003	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	12/02/2003	NR	Kidney tumors in Sprague-DawleyCrl-CD-SD (BR) rats (M)
Bispyrabac Sodium	125401-92-5	078906	Not Likely to Be Carcinogenic to Humans	8/2/2001	NR	Not Applicable
Bitertanol	55179-31-2	117801	Not Likely To Be Carcinogenic To Humans	11/30/2005	NR	Not Applicable
Borax	1303-96-4	011102	Group E--Evidence of Non-carcinogenicity for humans	11/24/1993	NR	Not Applicable
Boric acid	10043-35-3	011001	Group E--Evidence of Non-carcinogenicity for humans	11/24/1993	NR	Not Applicable
Boron	7440-42-8	128945	Group E--Evidence of Non-carcinogenicity for humans	11/24/1993	NR	Not Applicable
Boscalid	188425-85-6	128008	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	11/14/2002	NR	Thyroid tumors in Wistar rats (M & F)
Bromacil	314-40-9	012301	Group C--Possible Human Carcinogen	1/13/1993	RfD Approach	Liver tumors in CD-1 mice (M) Thyroid tumors in Crl:CD (BR) rats (M)

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Bromoxynil	1689-84-5	035301	Group C--Possible Human Carcinogen	03/12/1997	Q1* = 1.03 E-1 (3/4)	Liver tumors in CD-1 mice (M & F)
Bromuconazole	116255-48-2	120503	Group E--Evidence of Non-carcinogenicity for humans	4/24/1995	NR	Not Applicable
Bronopol	52-51-7	216400	Group E--Evidence of Non-carcinogenicity for humans	6/12/1995	NR	Not Applicable
Buprofezin	69327-76-0	275100	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	3/15/2000	NR	Liver tumors in CD-1 mice (F)
Butachlor	23184-66-9	112301	Likely to be Carcinogenic to Humans	2/24/1999	NR	Tumors at multiple sites: Stomach (F) and Kidney, Nose, Thyroid (M & F) in Sprague-Dawley rats
Butafenacil	134605-64-4	122004	Not Likely to Be Carcinogenic to Humans	7/11/2003	NR	Not Applicable
Butylate	2008-41-5	041405	Group E--Evidence of Non-carcinogenicity for humans	11/25/1992	NR	Not Applicable
Cacodylic acid	75-60-5	012501	Group B--Probable Human Carcinogen	12/14/1999	Q1* = 6.23 E-2 (3/4)	Urinary bladder tumors in Fischer 344 rats (M & F) Fibrosarcomas in multiple organs in B6C3F1 mice (F)
Cadusafos	95465-99-9	128864	Group E--Evidence of Non-carcinogenicity for humans	5/28/1992	NR	Not Applicable
Captafol	2939-80-2	081701	Group B--Probable Human Carcinogen	5/19/1987	Q1* = 5.1 E-2 (2/3)	Mammary and Liver tumors in Sprague-Dawley rats (F) Kidney tumors in Sprague-Dawley rats (M & F) Lymphosarcomas & Hemangiosarcomas in CD-1 mice (M & F) Harderian gland tumors in CD-1 mice (M)
Captan	133-06-2	081301	Likely at prolonged, high-level exposures, but not likely at dose levels that do not cause cytotoxicity and regenerative cell hyperplasia	9/22/2004	NR	Intestinal tumors in CD-1 mice (M & F); Established a cytotoxic and regenerative proliferation mode of action for intestinal tumors.
Carbaryl	63-25-2	056801	Likely to be Carcinogenic to Humans	2/12/2002	Q1* = 8.75 E-4 (3/4)	Vascular tumors in CRL:CD-1 (ICR)BR mice (M)
Carbendazim (MBC)	10605-21-7	128872	Group C--Possible Human Carcinogen	4/7/1989	Q1* = 2.39 E-3 (3/4)	Liver tumors in CD-1 mice (M & F) Liver tumors in Swiss SPF (M & F)
Carbofuran	1563-66-2	090601	Not Likely to Be Carcinogenic to Humans	6/17/1997	NR	Not Applicable
Carboxin	5234-68-4	090201	Not Likely to Be Carcinogenic to Humans	6/5/2003	NR	Not Applicable

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Carfentrazone-ethyl	128639-02-1	128712	Not Likely to Be Carcinogenic to Humans	5/16/2001	NR	Not Applicable
Chlorantraniliprole	500008-45-7	090100	Not Likely To Be Carcinogenic To Humans	3/4/2009	NR	Not Applicable
Chlordimeform	6164-98-3	059701	Group B--Probable Human Carcinogen	12/20/1985	Q1* = 1.29 E-1 (3/4)	Hemangioendothelomas in Tif:MAG:SPF mice (M & F)
Chlorethoxyfos	54593-83-8	129006	Group D--Not Classifiable as to Human Carcinogenicity	3/9/1995	NR	Not Applicable
Chlorfenapyr	122453-73-0	129093	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	3/18/2003	NR	Tumors at multiple sites (Liver, Histiocytic sarcomas and Testes in M; Uterus in F) in Sprague Dawley rats
Chlorflurenol Methyl Ester	2536-31-4	098801	Not Likely To Be Carcinogenic To Humans	7/10/2006	NR	Not Applicable
Chlorimuron-ethyl	90982-32-4	128901	Not Likely To Be Carcinogenic To Humans	2/5/2009	NR	Not Applicable
Chlormequat chloride	999-81-5	018101	Not Likely To Be Carcinogenic To Humans	6/12/2007	NR	Not Applicable
Chloroaniline, p-	106-47-8	017203	Group B--Probable Human Carcinogen	4/27/1995	Q1* = 1.12 E-1 (3/4)	Spleen tumors in F344/N rats (M) Adrenal tumors in F344/N rats (M & F) Liver tumors in B6C3F1 mice (M) Spleen tumors in B6C3F1 mice (M)
Chloroneb	2675-77-6	027301	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	12/18/2003	NR	Not Applicable
Chloropicrin	76-06-2	081501	Not Likely To Be Carcinogenic To Humans	6/30/2010	NR	Not Applicable
Chlorothalonil	1897-45-6	081901	Likely To Be Carcinogenic To Humans	10/20/1997	MOE Approach	Kidney tumors in CD-1 mice (M), Kidney tumors in Fischer 344 rats (M & F) Kidney tumors in Osborne-Mendel rats (M & F) Forestomach tumors in Fischer 344 rats (M & F) Forestomach tumorsCD-1 mice (M & F)
Chlorpropham	101-21-3	018301	Group E--Evidence of Non-carcinogenicity for humans	10/11/1994	NR	Not Applicable
Chlorpyrifos	2921-88-2	059101	Group E--Evidence of Non-carcinogenicity for humans	11/23/1993	NR	Not Applicable

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Chlorpyrifos methyl	5598-13-0	059102	Not Likely to Be Carcinogenic to Humans	5/17/1999	NR	Not Applicable
Chlorsulfuron	64902-72-3	118601	Group E--Evidence of Non-carcinogenicity for humans	7/17/2002	NR	Not Applicable
Chlorthal-dimethyl (DCPA)	1861-32-1	078701	Group C--Possible Human Carcinogen	2/10/1995	Q1* = 1.49 E-3 (3/4)	Thyroid tumors in Sprague-Dawley rats(M & F) Liver tumors in Sprague-Dawley rats (F) Liver tumors CD-1 mice (F)
Clethodim	99129-21-2	121011	Not Likely To Be Carcinogenic To Humans	9/28/2007	NR	Not Applicable
Clodinafop-propargyl	105512-06-9	125203	Suggestive Evidence of Carcinogenic Potential	2/8/2006	NR	Prostate gland tumors in Tif: RAIf (SPF) rat (M) Liver tumors in Tif:MAGf (SPF) mouse (M &F); Established a PPARa mode of action for liver tumors.
Clofencet (MON 21200)	82697-71-0	128726	Group C--Possible Human Carcinogen	7/23/1996	RfD Approach	Histiocytic sarcomas in CD-1 mice (F)
Clofentezine	74115-24-5	125501	Group C--Possible Human Carcinogen	4/3/1990	Q1* = 3.76 E -2 (3/4)	Thyroid tumors in Sprague-Dawley rats (M)
Clomazone	81777-89-1	125401	Not Likely to Be Carcinogenic to Humans	1/31/2001	NR	Not Applicable
Clopyralid	1702-17-6	117403	Not Likely to Be Carcinogenic to Humans	12/20/1999	NR	Not Applicable
Cloquintocet-mexyl	99607-70-2	700099	Not Likely to Be Carcinogenic to Humans	8/31/1999	NR	Not Applicable
Cloransulam-methyl	147150-35-4	129116	Group E--Evidence of Non-carcinogenicity for humans	9/30/1997	NR	Not Applicable
Clothianidin	210880-92-5	044309	Not Likely to Be Carcinogenic to Humans	1/6/2003	NR	Not Applicable
CMNP (Pyrazachlor)	6814-58-0	207100	Likely To Be Carcinogenic To Humans	09/20/2011	Q1* = 2.36 X 10 E -2	Rat Crl:CD (BR) (M) Liver; Mouse CD-1 (M & F) Lung and Kidney
Cocamide Diethanolamine	68603-42-9	224600	Likely to be Carcinogenic to Humans	10/17/2001	Q1* = 4.01 E-1 (3/4)	Liver tumors in B6C3F1 mice (M &F) Kidney tumors in B6C3F1 mice (M)
Copper Compounds	20427-59-2	023401	Group D--Not Classifiable As To Human Carcinogenicity	6/13/2006	NR	Not Applicable
Coumaphos	56-72-4	036501	Not Likely to Be Carcinogenic to Humans	6/25/1999	NR	Not Applicable

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Cresol, p-Chloro-m-	59-50-7	064206	Group D--Not Classifiable as to Human Carcinogenicity	11/28/1995	NR	Not Applicable
Cryolite	15096-52-3	075101	Group D--Not Classifiable as to Human Carcinogenicity	12/22/1995	NR	Not Applicable
Cumyluron	99485-76-4	027902	Suggestive Evidence Of Carcinogenic Potential	6/11/2008	NR	Liver tumors in B6C3F1 mice (M &F)
Cyanazine	21725-46-2	100101	Group C--Possible Human Carcinogen	7/30/1991	Q1* = 1.01 E-0 (2/3)	Mammary gland tumors in Sprague- Dawely rats (F)
Cyantraniliprole	736994-63-1	090098	Not Likely To Be Carcinogenic To Humans	03/07/13	NR	Not applicable
Cyazofamid	120116-88-3	085651	Not Likely To Be Carcinogenic To Humans	6/3/2009	NR	Not Applicable
Cyclanilide	113136-77-9	026201	Not Likely to Be Carcinogenic to Humans	4/9/1997	NR	Not Applicable
Cycloate	1134-23-2	041301	Not Likely to Be Carcinogenic to Humans	9/25/2003	NR	Not Applicable
Cyflufenamid	180409-60-3	555550	Likely To Be Carcinogenic To Humans	6/22/2010	Q1* = 6.61 E -3 (3/4)	Thyroid Follicular Cell tumors in Crl:CD Rat (M); Liver CD-1 Mouse (M)
Cyflumetofen	400882-07-7	138831	Suggestive Evidence Of Carcinogenic Potential	12/30/2013	NR	Thyroid C-Cell tumors in Fisher 344 Rat (M)
Cyfluthrin	68359-37-5	128831	Not Likely to Be Carcinogenic to Humans	5/21/2002	NR	Not Applicable
Cyhalofop-butyl	122008-85-9	082583	Not Likely To Be Carcinogenic To Humans	12/20/2007	NR	Not applicable; Established a PPARa mode of action for mouse liver tumors.
Cyhalothrin	68085-85-8	128867	Group D--Not Classifiable as to Human Carcinogenicity	8/25/1993	NR	Not Applicable
Cyhexatin	13121-70-5	101601	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	4/7/2005	NR	Not Applicable
Cymoxanil	57966-95-7	129106	Not Likely to Be Carcinogenic to Humans	1/2/2003	NR	Not Applicable
Cypermethrin	52315-07-8	109702	Group C--Possible Human Carcinogen	9/27/1988	NR	Lung tumors in Alderly Park SPF Swiss mice (F)

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Cyproconazole	94361-06-5	128993	Not Likely To Be Carcinogenic To Humans at doses that do not cause a mitogenic response in the liver	12/4/2007	NR	Liver tumors in CD-1 mice (M & F); Established a non-genotoxic, mitogenic mode of action for liver tumors.
Cyprodinil	121552-61-2	288202	Not Likely to Be Carcinogenic to Humans	1/14/1998	NR	Not Applicable
Cyprosulfamide	221667-31-8	877400	Not Likely To Be Carcinogenic To Humans	2/29/2008	NR	Kidney tumors in Wistar rats (M); Urinary bladder tumors in Wistar rats(F) Urinary bladder tumors & Histicocytic sarcomas in C57BL/6J mice (F); Established a cytotoxicity and regenerative proliferation mode of action for urinary bladder tumors.
Cyromazine	66215-27-8	121301	Group E--Evidence of Non-carcinogenicity for humans	1/6/1995	NR	Not Applicable
Daminozide	1596-84-5	035101	Group B--Probable Human Carcinogen	7/26/1991	Q1* = 8.7 E-3 (2/3)	Tumors at multiple sites (Cecum, Kidneys, Liver, Lung, Nose, Pancreas, Uterus, Vascular) in Fischer 344 rats (M & F); B6C3F1 mice (M & F) Swiss mice (M & F); C57BL mice (F); CD-1 mice (M & F) and Syrian Golden hamster (M)
Dantochlor (BCDMH)	118-52-5	028501	Not Likely to Be Carcinogenic to Humans	8/14/2000	NR	Not Applicable
Dazomet	533-74-4	035602	Group D--Not Classifiable as to Human Carcinogenicity	12/7/1993	NR	Not Applicable
DEET	134-62-3	080301	Group D--Not Classifiable as to Human Carcinogenicity	1/4/1996	NR	Not Applicable
Deltamethrin	52918-63-5	097805	Not Likely to Be Carcinogenic to Humans	9/9/2003	NR	Not Applicable
Desmedipham	13684-56-5	104801	Group E--Evidence of Non-carcinogenicity for humans	11/20/1995	NR	Not Applicable
Diazinon	333-41-5	057801	Not Likely to Be Carcinogenic to Humans	6/17/1997	NR	Not Applicable
Dicamba	1918-00-9	029801	Group D--Not Classifiable as to Human Carcinogenicity	7/29/1996	NR	Not Applicable
Dichlobenil	1194-65-6	027401	Group C--Possible Human Carcinogen	7/18/1995	RfD Approach	Liver tumors in Fischer 344 rats (M &F) Liver tumors in Syrian Golden hamsters (M)

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Dichlormid	37764-25-3	900497	Not Likely To Be Carcinogenic To Humans	11/15/2005	NR	Not Applicable
Dichlorobenzamide, 2,6-	2008-58-4	027402	Group D--Not Classifiable as to Human Carcinogenicity	11/28/1995	NR	Not Applicable
Dichlorvos	62-73-7	084001	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	3/1/2000	NR	Mononuclear cell leukemia in Fisher 344 rats (M) Forestomach tumors in B63F1 mice(F)
Diclofop-methyl	51338-27-3	110902	Likely to be Carcinogenic to Humans	5/24/2000	Q1* = 7.36 E-2 (3/4)	Thyroid (F) and Liver (F & M) & Leydig cell (M) tumors in Wistar rats Liver tumors in B6C3F1 mice (M & F)
Dicloran	99-30-9	031301	Suggestive Evidence Of Carcinogenic Potential	09/05/2006	NR	Testes tumors in Wistar Rat (M)
Diclosulam	145701-21-9	129122	Not Likely to Be Carcinogenic to Humans	11/9/1999	NR	Not Applicable
Dicofol	115-32-2	010501	Group C--Possible Human Carcinogen	6/24/1992	RfD Approach	Liver tumors in B6C3F1 mice (M)
Dicrotophos	141-66-2	035201	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	10/18/1999	NR	Thyroid tumors in C57BL/10 J CD-1 Alpk mice (M & F)
Didecyl dimethyl ammonium chloride (DDAC)	7173-51-5	069149	Group E--Evidence of Non-carcinogenicity for Humans	4/11/2000	NR	Not Applicable
Difenoconazole	119446-68-3	128847	Group C--Possible Human Carcinogen	7/27/1994	MOE Approach	Liver tumors in CD-1 mice (M & F)
Difenzoquat methyl sulfate	43222-48-6	106401	Group E--Evidence of Non-carcinogenicity for humans	5/24/1994	NR	Not Applicable
Diflubenzuron	35367-38-5	108201	Group E--Evidence of Non-carcinogenicity for humans	4/27/1995	NR	Not Applicable
Diflufenzopyr Sodiium	109293-98-3	005107	Not Likely to Be Carcinogenic to Humans	10/6/1998	NR	Not Applicable
Dimethenamid	87674-68-8	129051	Group C--Possible Human Carcinogen	9/15/1995	RfD Approach	Liver tumors in Sprague-Dawley rats (M)
Dimethipin	55290-64-7	118901	Group C--Possible Human Carcinogen	1/5/1990	NR	Lung tumors in CD-1 mice (M)
Dimethoate	60-51-5	035001	Group C--Possible Human Carcinogen	3/26/2002	RfD Approach	Hemolymphoreticular tumors in B6C3F1 mice (M) Spleen, Skin, Lymphnode tumors in Wistar rats (M)

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Dimethomorph	110488-70-5	268800	Not Likely to Be Carcinogenic to Humans	5/13/1998	NR	Not Applicable
Dimethoxane	828-00-2	001001	Suggestive Evidence of Carcinogenic Potential	12/21/2000	NR	Not Applicable
Dimethyl ether	115-10-6	900382	Group D--Not Classifiable as to Human Carcinogenicity	1/12/1994	NR	Not Applicable
Dimethylhydantoin	16079-88-2	006315	Not Likely to Be Carcinogenic to Humans	8/28/2000	NR	Not Applicable
Dinocap	39300-45-3	036001	Group E--Evidence of Non-carcinogenicity for Humans	6/22/1994	NR	Not Applicable
Dinoseb	88-85-7	037505	Group C--Possible Human Carcinogen	6/19/1986	NR	Liver tumors in CD-1 mice (F)
Dinotefuran	165252-70-0	044312	Not Likely to Be Carcinogenic to Humans	3/5/2004	NR	Not Applicable
Diphenylamine	122-39-4	038501	Not Likely to Be Carcinogenic to Humans	4/1/1997	NR	Not Applicable
Diquat dibromide	85-00-7	032201	Group E--Evidence of Non-carcinogenicity for Humans	5/12/1994	NR	Not Applicable
Disodium methanearsonate	144-21-8	013802	Not Likely to Be Carcinogenic to Humans	7/26/2000	NR	Not Applicable
Disulfoton	298-04-4	032501	Group E--Evidence of Non-carcinogenicity for Humans	4/21/1997	NR	Not Applicable
Dithianon	3347-22-6	099201	Suggestive Evidence of Carcinogenic Potential	2/23/2006	NR	Kidney tumors in Sprague Dawley rats (F)
Dithiopyr (MON 7200)	97886-45-8	128994	Group E--Evidence of Non-carcinogenicity for Humans	5/29/1997	NR	Not Applicable
Diuron	330-54-1	035505	Known/Likely	5/8/1997	Q1* = 1.91 E-2 (3/4)	Urinary bladder tumors in Wistar rats (M&F) Kidney tumors in Wistar rats (M) Mammary tumors in NMRI mice (F)
Dodine	2439-10-3	044301	Not Likely To Be Carcinogenic To Humans	1/24/2008	NR	Not Applicable
Ecolyst		069089	Not Likely to Be Carcinogenic to Humans	10/19/1999	NR	Not Applicable
Emamectin Benzoate (Deoxy Avermectin)	137512-74-4	122806	Not Likely to Be Carcinogenic to Humans	3/19/1998	NR	Not Applicable
Endosulfan	115-29-7	079401	Not Likely to Be Carcinogenic to Humans	1/31/2000	NR	Not Applicable

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Endothall	145-73-3	038901	Not Likely To Be Carcinogenic To Humans	10/23/2008	NR	Not Applicable
Epoxiconazole	106325-08-0, 133855-98-8	123909	Likely to be Carcinogenic to Humans	1/24/2001	Q1* = 3.04E-2 (3/4)	Liver tumors in C57BL/6N CrlBr mice (M & F) Liver and Adrenal (M & F) and ovarian (F) tumors in Wistar rats
Esbiothrin	28434-00-6	004007	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	12/2/2003	NR	Kidney tumors in Sprague-Dawley Crl-CD-SD(BR) rats (M)
Esfenvalerate	66230-04-4	109303	Group E--Evidence of Non-carcinogenicity for Humans	7/1/1996	NR	Not Applicable
Ethaboxam	162650-77-3	090205	Suggestive Evidence of Carcinogenic Potential	3/23/2006	NR	Leydig cell tumors in Sprague Dawley rats (M)
Ethalfluralin	55283-68-6	113101	Group C--Possible Human Carcinogen	9/14/1994	Q1* = 8.9 E-2 (3/4)	Mammary, Urinary bladder & Kidney tumors in Fischer 344 rats (M & F)
Ethephon	16672-87-0	099801	Group D--Not Classifiable as to Human Carcinogenicity	8/15/1994	NR	Not Applicable
Ethion	563-12-2	058401	Group E--Evidence of Non-carcinogenicity for humans	1/26/1994	NR	Not Applicable
Ethiprole	181587-01-9	005550	Suggestive Evidence Of Carcinogenic Potential	10/28/2010	NR	Thyroid Follicular Cell Wistar Rat (M); Liver C57BL/6J (F)
Ethofumesate	26225-79-6	110601	Group D--Not Classifiable as to Human Carcinogenicity	2/24/1994	NR	Not Applicable
Ethoprop	13194-48-4	041101	Likely to be Carcinogenic to Humans	10/7/1998	Q1* = 2.81 E-2 (3/4)	Adrenal tumors in Sprague-Dawley rats (M) Thyroid tumors in Sprague-Dawley & Fischer 344 rats (M)
Ethyl dipropylthiocarbamate (EPTC)	759-94-4	041401	Not Likely to Be Carcinogenic to Humans	8/31/1999	NR	Not Applicable
Ethylene thiourea (ETU)	96-45-7	600016	Group B--Probable Human Carcinogen	7/7/1999	Q1* = 6.01 E-2 (3/4)	Thyroid tumors in Fischer 344 rats (M & F) Pituitary and Liver tumors in B6C3F1 mice (M & F)
Etofenprox	80844-07-1	128965	Not likely to be carcinogenic to humans at doses that do not alter rat thyroid hormone homeostasis.	2/8/2006	NR	Thyroid tumors in Sprague-Dawley rats (M & F); Established a thyroid hormone disruption mode of action for thyroid tumors.

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Etoxazole	153233-91-1	107091	Not Likely to Be Carcinogenic to Humans	8/7/2003	NR	Not Applicable
Famoxadone	131807-57-3	113202	Not Likely to Be Carcinogenic to Humans	4/16/2003	NR	Not Applicable
Fenamidone	161326-34-7	046679	Not Likely to Be Carcinogenic to Humans	7/12/2002	NR	Not Applicable
Fenamiphos	22224-92-6	100601	Group E--Evidence of Non-carcinogenicity for Humans	11/23/1993	NR	Not Applicable
Fenarimol	60168-88-9	206600	Not Likely to Be Carcinogenic to Humans	9/5/2001	NR	Not Applicable
Fenazaquin	120928-09-8	044501	Not Likely To Be Carcinogenic To Humans	5/15/2007	NR	Not Applicable
Fenbuconazole	114369-43-6	129011	Group C--Possible Human Carcinogen	4/15/1996	Q1* = 3.59 E-3 (3/4)	Thyroid tumors in Sprague-Dawley rats (M) Liver tumors in CD-1 mice (M & F)
Fenbutatin-oxide	13356-08-6	104601	Group E--Evidence of Non-carcinogenicity for Humans	3/2/1993	NR	Not Applicable
Fenhexamide	126833-17-8	090209	Not Likely to Be Carcinogenic to Humans	3/4/1999	NR	Not Applicable
Fenitrothion	122-14-5	105901	Group E--Evidence of Non-carcinogenicity for Humans	7/13/1993	NR	Not Applicable
Fenoxaprop-ethyl	9015-56-9	128701	Suggestive Evidence Of Carcinogenic Potential Suggestive Evidence Of Carcinogenic Potential	7/29/2013	RfD Approach	Liver tumors in NMRI Mouse (M); N/A
Fenoxycarb	72490-01-8	125301	Likely to be Carcinogenic to Humans	12/22/97	Q1* = 7.00 E-2 (3/4)	Lung tumors & Harderian gland tumors in CD-1 mice (M)
Fenpropathrin	39515-41-8	127901	Not Likely to be Carcinogenic to Humans	12/22/2003	NR	Not Applicable
Fenpropidin	67306-00-7	012305	Suggestive Evidence Of Carcinogenic Potential	6/9/2009	NR	Pancreas Rat Sprague-Dawley (M) Pancreas Rat (M) Sprague-Dawley; No
Fenpropimorph	67564-91-4	121402	Not Likely To Be Carcinogenic To Humans	10/19/2005	NR	Not Applicable
Fenpyroximate	134098-61-6	129131	Not Likely to Be Carcinogenic to Humans	2/19/1997	NR	Not Applicable
Fenthion	55-38-9	053301	Group E--Evidence of Non-carcinogenicity for Humans	3/11/1996	NR	Not Applicable
Fenvalerate	51630-58-1	109301	Group E--Evidence of Non-carcinogenicity for Humans	2/10/2003	NR	Not Applicable

CHEMICAL	CAS NO.	PC CODE	CANCER CLASSIFICATION	REPORT DATE	QUANTIFICATION METHOD	TUMOR SITES/ STRAIN/ SPECIES/ SEX
Ferbam	14484–64–1	034801	See Ziram	4/6/2000	NR	
Fipronil	120068-37-3	129121	Group C--Possible Human Carcinogen	7/18/1995	RfD Approach	Thyroid tumors in CD rats (M & F)
Flazasulfuron	104040-78-0	119011	Not Likely To Be Carcinogenic To Humans	11/16/2005	NR	Not Applicable
Flonicamid	158062-67-0	128016	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	2/24/2005	NR	Nasolacrimal duct tumors in Wistar rats (F) Lung tumors in CD-1 mice (M & F); Established a mitogenic mode of action for mouse lung tumors.
Florasulam	145701-23-1	129108	Not Likely To Be Carcinogenic To Humans	5/31/2007	NR	Not Applicable
Fluazifop-P-Butyl	79241-46-6	122809	Not Likely To Be Carcinogenic To Humans	9/19/2008	NR	Not Applicable
Fluazinam	79622-59-6	129098	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	3/29/2001	NR	Thyroid tumors in Sprague-Dawley (M) Liver tumors in CD-1 mice (M)
Flubendiamide	272451-65-7	027602	Not Likely To Be Carcinogenic To Humans	4/3/2008	NR	Not Applicable
Flucarbazone-sodium	181274-17-9	114009	Not Likely to Be Carcinogenic to Humans	7/19/2000	NR	Not Applicable
Fludioxonil	131341-86-1	071503	Group D--Not Classifiable as to Human Carcinogenicity	9/19/1996	NR	Not Applicable
Fluensulfone	318290-98-1	050410	Suggestive Evidence Of Carcinogenic Potential	05/07/2014	RfD Approach	Lung tumors in CD-1 Mouse (F)
Flufenacet (Thiaflumide)	142459-58-3	121903	Not Likely to Be Carcinogenic to Humans	7/16/1997	NR	Not Applicable
Flufenoxuron	101463-69-8	108203	Not Likely To Be Carcinogenic To Humans	8/15/2006	NR	Not Applicable
Flufenpyr-ethyl	188489-07-8	108853	Not Likely to Be Carcinogenic to Humans	6/8/2003	NR	Not Applicable
Flumethrin	69770-45-2	036007	Not Likely To Be Carcinogenic To Humans	03/06/12	NR	Not Applicable
Flumetralin	62924-70-3	123001	Not Likely To Be Carcinogenic To Humans	6/21/2007	NR	Not Applicable

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Flumetsulam (XRD-498)	98967-40-9	129016	Group E--Evidence of Non-carcinogenicity for Humans	3/24/1993	NR	Not Applicable
Flumiclorac pentyl	87546-18-7	128724	Group E--Evidence of Non-carcinogenicity for Humans	9/7/1994	NR	Not Applicable
Flumioxazin	103361-09-7, 141490-50-8	129034	Not Likely to Be Carcinogenic to Humans	2/22/2001	NR	Not Applicable
Fluometuron	2164-17-2	035503	Group C--Possible Human Carcinogen	8/28/1996	Q1* = 1.80 E-2 (3/4)	Lung tumors (M) & Lymphocytic lymphomas (F) in CD-1 mice
Fluopicolide	239110-15-7	027412	Not Likely to Be Carcinogenic to Humans	12/12/2006	RfD Approach	Liver tumors in C57Bl/6 mice (M & F); Established a mitogenic mode of action for liver tumors in mice.
Fluopyram	658066-35-4	080302	Not Likely To Be Carcinogenic To Humans	05/08/2014	NR	Thyroid Follicular Cell C57BL/6J Mouse (M); Liver Wistar Rat (F); This classification was based on convincing evidence that non-genotoxic modes of action (MOA) for liver tumors in rats and thyroid tumors in mice have been established and that the carcinogenic effects have been demonstrated as a result of a mode of action dependent on activation of the CAR/PXR receptors.
Fluoxastrobin	361377-29-9	028869	Not Likely To Be Carcinogenic To Humans	1/24/2005	NR	Not Applicable
Flupyradifurone	951659-40-8	122304	Not likely to be Carcinogenic to Humans	8/5/2014	NR	Not Applicable
Fluridone	59756-60-4	112900	Group E--Evidence of Non-carcinogenicity for Humans	7/1/1985	NR	Not Applicable
Fluroxypyr	81406-37-3	128968	Not Likely To Be Carcinogenic To Humans	6/26/2003	NR	Not Applicable
Fluroxypyr acid (see also PC Code 128968)	69377-81-7	128959	Not Likely to Be Carcinogenic to Humans	6/26/2003	NR	Not Applicable
Flurprimidol	56425-91-3	125701	Not Likely To Be Carcinogenic To Humans	9/29/2005	NR	Not Applicable
Fluthiacet methyl	117337-19-6	108803	Likely to be Carcinogenic to Humans	11/20/1998	Q1* = 2.07 E-1 (3/4)	Pancreatic tumors in Sprague-Dawley rats (M) Liver tumors in CD-1 mice (M & F)
Flutolanil	66332-96-5	128975	Group E--Evidence of Non-carcinogenicity for Humans	6/9/1994	NR	Not Applicable
Flutriafol	76674-21-0	128940	Not Likely To Be Carcinogenic To Humans	6/1/2009	NR	Not Applicable

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Fluxapyroxad	907204-31-3	138009	Not Likely To Be Carcinogenic To Humans: below a defined dose range	6/9/2011	RfD Approach	Wistar Rat Liver (M & F); Wistar Rat Thyroid Follicular Cell (M); Established a mitogenic mode of action for liver tumors and non-genotoxic mode of action for thyroid tumors.
Folpet	133-07-3	081601	Not likely to be carcinogenic to humans at doses that do not cause an irritation response in the mucosal epithelium	10/13/2010	RfD Approach	Duodenum tumors in CD-1 mice (M & F) and B6C3F1 mice (M & F) Skin tumors in B6C3F1 mice (M); Cytotoxicity and Regeneration Proliferation
Fomesafen	108731-70-0	123802	Not Likely to Be Carcinogenic to Humans	11/3/2005	NR	Liver tumors in CD-1 mice (M & F); Established a PPARa mode of action for liver tumors
Fonofos	944-22-9	041701	Group E--Evidence of Non-carcinogenicity for Humans	11/10/1993	NR	Not Applicable
Forchlorfenuron	68157-60-8	128819	Not Likely To Be Carcinogenic To Humans	3/11/2008	NR	Not Applicable
Formasulfuron	173159-57-4	122020	Not Likely to Be Carcinogenic to Humans	9/19/2001	NR	Not Applicable
Formetanate hydrochloride	23422-53-9	097301	Group E--Evidence of Non-carcinogenicity for Humans	5/20/1996	NR	Not Applicable
Fosetyl-Al	39148-24-8	123301	Not Likely To Be Carcinogenic To Humans	4/22/1999	NR	Not Applicable
Fosthiazate	98886-44-3	129022	Not Likely to Be Carcinogenic to Humans	9/15/2003	NR	Not Applicable
Furfural	98-01-1	043301	Likely To Be Carcinogenic To Humans	02/06/2014	Q1* = 3.49 X 10 E-2	Liver tumors in F344/N Rat (M); Liver B6C3F1 Mouse (M & F)
Furfuryl Alcohol	98-00-0	643300	Likely To Be Carcinogenic To Humans	02/06/2014	Q1* = 1.31 X 10 E-1	Nasal tumors in F344/N Rat (M); Kidney B6C3F1 Mouse (M)
Furilazole (MON 13900)	121776-33-8	911596	Likely to be Carcinogenic to Humans	10/15/1999	Q1* = 2.74 E-2 (3/4)	Tumors at multiple sites (Liver, Lung, Stomach, Testes) in Sprague-Dawley rats (M&F) & CD-1 mice (M & F)
Furmecyclox	60568-05-0	122601	Group B--Probable Human Carcinogen	7/3/1985	Q1* = 2.98 E-2 (2/3)	Liver & Urothelial tumors in Sprague-Dawley rats (M & F)
Gamma Cyhalothrin	76703-62-3	128807	Not Likely to Be Carcinogenic to Humans	3/1/2004	NR	Not Applicable
Gentamicin Sulfate	1405-41-0	006325	Not Likely To Be Carcinogenic To Humans	3/21/2007	NR	Not Applicable
Glufosinate-ammonium	77182-82-2	128850	Not Likely to Be Carcinogenic to Humans	5/17/1999	NR	Not Applicable
Glutaraldehyde	111-30-8	043901	Not Likely to Be Carcinogenic to Humans	5/18/2006	NR	Not applicable

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Glyphosate	1071-83-6	417300	Group E--Evidence of Non-carcinogenicity for Humans	10/30/1991	NR	Not Applicable
Halosulfuron methyl (MON 1200)	100784-20-1	128721	Not Likely to Be Carcinogenic to Humans	2/26/1998	NR	Not Applicable
Haloxyfop-methyl	690806-40-2	125201	Group B--Probable Human Carcinogen	9/18/1989	Q1* = 7.39 E+0 (2/3)	Liver tumors in B6C3F1 mice (M & F)
Hexaconazole	79983-71-4	128925	Group C--Possible Human Carcinogen	1/21/1999	Q1* = 1.6 E-2 (3/4)	Leydig cell tumors in Wistar (Alpk:APfSD) rats (M)
Hexavalent Chromium (CrVI)	18540-29-9	021101; 068302	Likely to be Carcinogenic to Humans	07/01/09	Q1* = 7.91 E-1 (3/4)	Oral mucosa & Tongue tumors in F344 rats (M & F) Intestinal (duodenum, jejunum, and ileum) tumors in B6C3F1 mice (M & F); Established a mutagenic mode of action.
Hexazinone	51235-04-2	107201	Group D--Not Classifiable as to Human Carcinogenicity	7/27/1994	NR	Not Applicable
Hexythiazox	78587-05-0	128849	Likely To Be Carcinogenic To Humans	9/2/09	RfD Approach	Liver tumors in B6C3F1 mice (F) Mammary Gland tumors (fibroadenomas) in Fisher 344 Rats (M); Not Applicable
HOE107892	135590-91-9	811800	Not Likely to Be Carcinogenic to Humans	11/24/1998	NR	Not Applicable
Hydramethylnon	67485-29-4	118401	Group C--Possible Human Carcinogen	3/28/1991	RfD Approach	Lung tumors in CD-1 mice (F)
Hydrogen cyanamide	420-04-2	014002	Group C--Possible Human Carcinogen	9/15/1993	Q1* = 6.64 E-2 (3/4)	Ovarian tumors in CRL:CD-1 (ICR)BR mice (F)
Hydroprene	41096-46-2	486300	Group D--Not Classifiable as to Human Carcinogenicity	6/8/1995	NR	Not Applicable
Imazalil	35554-44-0	111901	Likely to be Carcinogenic to Humans	12/7/1999	Q1* = 6.11 E-2 (3/4)	Liver & Thyroid tumors in Wistar rats (M) Liver tumors in Swiss albino mice (M)
Imazamethabenz	81405-85-8	128842	Group D--Not Classifiable as to Human Carcinogenicity	6/11/1987	NR	Not Applicable
Imazamox	114311-32-9	129171	Not Likely to Be Carcinogenic to Humans	2/27/1997	NR	Not Applicable
Imazapic	81334-60-3	129041	Group E--Evidence of Non-carcinogenicity for Humans	9/27/1995	NR	Not Applicable

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Imazapyr	81334-34-1	128821	Group E--Evidence of Non-carcinogenicity for Humans	10/5/1995	NR	Not Applicable
Imazaquin Acid	81335-37-7	128848	Not Likely To Be Carcinogenic To Humans	10/31/2005	NR	Not Applicable
Imazethapyr	81335-77-5	128922	Not Likely to Be Carcinogenic to Humans	1/31/2002	NR	Not Applicable
Imazosulfuron	122548-33-8	118602	Not Likely To Be Carcinogenic To Humans	3/13/2009	NR	Not Applicable
Imidacloprid	105827-78-9	129099	Group E--Evidence of Non-carcinogenicity for Humans	11/10/1993	NR	Not Applicable
Indaziflam	950782-86-2	080818	Not Likely To Be Carcinogenic To Humans	4/22/2010	NR	Not Applicable
Indoxacarb	173584-44-6	067710	Not Likely to Be Carcinogenic to Humans	7/17/2000	NR	Not Applicable
Iodomethane	74-88-4	000011	Not Likely to be Carcinogenic to Humans at doses that do not alter rat thyroid hormone homeostasis	11/10/2005	RfD Approach	Thyroid tumors in Fischer 344 rats (M) Thyroid tumors in B6C3F1 mice (M); Established a thyroid hormonal mode of action for thyroid tumors.
Iodosulfuran	144550-36-7	122021	Not Likely to Be Carcinogenic to Humans	1/5/2004	NR	Not Applicable
Ipoconazole	125225-28-7	125618	Not Likely To Be Carcinogenic To Humans	5/28/2008	NR	Not Applicable
Iprodione	36734-19-7	109801	Likely to be Carcinogenic to Humans	2/26/1998	Q1* = 4.39 E-2 (3/4)	Liver (M & F) & Ovarian luteomas (F) in CD-1 mice Leydig cell tumors in Crl:CD(SD)BR rats (M)
Iprovalicarb	140923-17-7	098359	Likely to be Carcinogenic to Humans	4/11/2002	Q1* = 4.47E-4 (3/4)	Tumors at multiple sites (Osteosarcomas, Urinary bladder, Uterus, Thyroid) in Wistar (Hsd/WIN:WU) rats (M & F)
Isofenphos	25311-71-1	109401	Group E--Evidence of Non-carcinogenicity for Humans	1/13/1998	NR	Not Applicable
Isophorone	78-59-1	047401	Group C--Possible Human Carcinogen	9/2/1999	Q1* = 6.08 E-4 (3/4)	Preputial gland tumors in F344/N rats (M)
Isopyrazam	881685-58-1	129222	Likely To Be Carcinogenic To Humans	2/2/2011	Q1* = 6.29 E-3 (3/4)	Wistar Rat Thyroid Follicular Cell (M); Wistar Rat Liver and Uterus (F)
Isoxaben	82558-50-7	125851	Suggestive Evidence of Carcinogenic Potential	10/7/2008	NR	Liver tumors in B6C3F1 mice (M & F)
Isoxadifen-ethyl	163520-33-0	823000	Not Likely to Be Carcinogenic to Humans	1/29/2001	NR	Not Applicable

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Isoxaflutole	141112-29-0	123000	Likely to be Carcinogenic to Humans	09/30/97	Q1* = 1.14 E-2 (3/4)	Liver (M & F) & Thyroid (M) tumors in CrL:CD(SD) BR VAF/Plus rats; Liver tumors in CD-1 mice (M & F)
Kasugamycin	6980-18-3	230001	Not Likely To Be Carcinogenic To Humans	8/17/2005	NR	Not Applicable
Kathon 886	55965-84-9	107106	Group D--Not Classifiable as to Human Carcinogenicity	5/18/1995	MOE Approach	Not Applicable
KBR 3023	119515-38-7	070705	Not Likely to Be Carcinogenic to Humans	6/9/1999	NR	Not Applicable
Kresoxim-methyl	143390-89-0	129111	Likely to be Carcinogenic to Humans	8/19/1999	Q1* = 2.90 E-3 (3/4)	Liver tumors in Wistar rats (M & F)
Lactofen	77501-63-4	128888	Likely to be Carcinogenic in Humans at High Doses. Not Likely to be Carcinogenic to Humans at Low Doses	10/17/2006	MOE approach	Liver neoplastic nodules in Sprague-Dawley rats (M & F) Liver tumors in CD-1 mice (M &F); Established a PPARa mode of action for liver tumors
Lambda cyhalothrin	91465-08-6	128897	Group D--Not classifiable as to Human Carcinogenicity	9/12/2002	NR	Not Applicable
Lindane	58-89-9	009001	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	11/29/2001	NR	Lung tumors in CD-1, Pseudoagouti, & Agouti mice (F)
Linuron	330-55-2	035506	Group C--Possible Human Carcinogen	11/20/2001	NR	Testicular tumors in CD rats (M) Liver tumors in CD-1 mice (M & F)
Malathion	121-75-5	057701	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	4/28/2000	NR	Liver, Oral palate & Nosetumors in Fischer 344 rats (M & F) Liver tumors in B6C3F1 mice (M & F)
Maleic hydrazide	123-33-1	051501	Group E--Evidence of Non-carcinogenicity for Humans	11/10/1993	NR	Not Applicable
Mancozeb	8018-01-7	014504	Group B--Probable Human Carcinogen	7/7/1999	Q1* = 6.01 E-2 (3/4) Based on ETU	Thyroid tumors in Crl:CD(BR) rats (M & F)
Mandipropamid	374726-62-2	036602	Not Likely To Be Carcinogenic To Humans	1/21/2009	NR	Not Applicable
Maneb	12427-38-2	014505	Group B--Probable Human Carcinogen	7/7/1999	Q1* = 6.01 E-2 (3/4) Based on ETU	Liver tumors in B6C3F1 mice (M & F) No acceptable study in rats
MB46513 (photodegradate of Fipronil)	120067-83-6	600050	Not Likely to Be Carcinogenic to Humans	12/6/2000	NR	Not Applicable

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MCPA + Salts	94-74-6	030501	Not Likely to Be Carcinogenic to Humans	10/29/2003	NR	Not Applicable
MCPB Acid	94-81-5	019201	Not Likely To Be Carcinogenic To Humans	10/1/2008	NR	Not Applicable
Mecoprop-P	16484-77-8	129046	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	3/13/2003	NR	Liver tumors in B6C3F1/CrlBR mice (F)
Mefenoxam	70630-17-0	113502	Not Likely to Be Carcinogenic to Humans	5/17/2000	NR	Not Applicable
Mefluidide	53780-34-0	114001	Not Likely To Be Carcinogenic To Humans	5/30/2007	NR	Not Applicable
Melamine	108-78-1	777201	Group D--Not Classifiable as to Human Carcinogenicity	7/21/1993	NR	Not Applicable
Mepanipyrim	110235-47-7	288203	Likely to be Carcinogenic to Humans	4/20/2004	Q1* = 1.35 E-2 (3/4)	Liver tumors in Fisher 344 rats (F) Liver tumors in B6C3F1 mice (M & F)
Mepiquat Chloride	24307-26-4	109101	Not Likely To Be Carcinogenic To Humans	2/19/2003	NR	Not Applicable
Meptyldinocap (DE-126/Dinocap II)	131-72-6	036000	Group E--Evidence Of Non-Carcinogenicity For Humans	3/17/2009	NR	Not applicable
Mercaptobenzothiazole, 2-	149-30-4	051701	Group C--Possible Human Carcinogen	11/19/1992	RfD Approach	Adrenal (M & F) and Pituitary (F) tumors in F344/N rats
Mesosulfuron methyl	208465-21-8	122009	Not Likely to Be Carcinogenic to Humans	3/4/2004	NR	Not Applicable
Mesotrione	104206-82-8	122990	Not Likely to Be Carcinogenic to Humans	4/12/2001	NR	Not Applicable
Metaflumizone	139968-49-3	281250	Not Likely To Be Carcinogenic To Humans	1/24/2006	NR	Not Applicable
Metalaxyl	57837-19-1	113501	Group E--Evidence of Non-carcinogenicity for Humans	4/20/1994	NR	Not Applicable
Metaldehyde	108-62-3	053001	Suggestive Evidence of Carcinogenic Potential	6/23/2005	NR	Liver tumors in Sprague Dawley rats (F) Liver tumors in CD-1 mice (M & F)
Metam sodium	137-42-8	039003	Likely To Be Carcinogenic To Humans	5/14/2009	Q1* = 1.98 E-1(3/4)	Malignant angiosarcomas (by both pair-wise & trend analysis) CD-1 Mouse (M & F)
Metconazole	125116-23-6	125619	Not Likely to Be Carcinogenic to Humans	4/14/2006	NR	Liver tumors in CD-1 mice (M & F); Established a mitogenic mode of action for liver tumors in mice

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Methamidophos	10265-92-6	101201	Not Likely to Be Carcinogenic to Humans	02/12/1998	NR	Not Applicable
Methidathion	950-37-8	100301	Group C--Possible Human Carcinogen	2/19/1988	NR	Liver tumors in CD-1 mice (M)
Methiocarb	2032-65-7	100501	Group D--Not Classifiable as to Human Carcinogenicity	3/2/1993	RfD Approach	Not Applicable
Methomyl	16752-77-5	090301	Group E--Evidence of Non-carcinogenicity for Humans	10/25/1996	NR	Not Applicable
Methoxyfenozide	161050-58-4	121027	Not Likely to Be Carcinogenic to Humans	7/1/1999	NR	Not Applicable
Methyl bromide	74-83-9	053201	Not Likely To Be Carcinogenic To Humans	06/20/2001	NR	Not Applicable
Methyl isothiocyanate	6317-18-6	068103	There are insufficient data to characterize the cancer risk of MITC.	4/30/2009	NR	Not Applicable
Methyl parathion	298-00-0	053501	Not Likely to Be Carcinogenic to Humans	12/1/1997	NR	Not Applicable
Metiram	9006-42-2	014601	Group B--Probable Human Carcinogen	7/7/1999	Q1* = 6.01 E-2 (3/4) Based on ETU	Thyroid tumors in Crl:CD(BR) rats (M & F)
Metofluthrin	240494-70-6	109709	Not Likely to Be Carcinogenic to Humans at doses that do not result in a mitogenic response.	7/26/2007	NR	Liver tumors in both sexes of Wistar rats.; Established a mitogenic mode of action for liver tumors in rats.
Metolachlor	51218-45-2	108801	Group C--Possible Human Carcinogen	11/16/1994	MOE Approach	Liver tumors in Charles River CD (SD)BR rats (F)
Metrafenone	220899-03-6	000325	Suggestive Evidence of Carcinogenic Potential	7/6/2006	NR	Liver Tumors in CD-1 Mice (M)
Metribuzin	21087-64-9	101101	Group D--Not Classifiable as to Human Carcinogenicity	5/16/1995	NR	Not Applicable
Metsulfuron methyl	74223-64-6	122010	Not Likely to Be Carcinogenic to Humans	3/14/2002	NR	Not Applicable

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Mevinphos	7786-34-7	015801	Not Likely To Be Carcinogenic To Humans	5/17/2000	NR	Not Applicable
MGK 264	113-48-4	057001	Group C--Possible Human Carcinogen	6/7/1995	RfD Approach	Liver tumors in CD-1 mice (M & F) Thyroid tumors in Crl:CDBR rats (M)
MGK Replellent 326	136-45-8	047201	Group B--Probable Human Carcinogen	11/12/2002	Q1* = 1.6 E-3 (3/4)	Tumors at multiple sites (Liver, Kidney, Testes, Uterus) in CD rats (M & F) Liver (M) & Lung (F) tumors in CD-1 mice
Molinate	2212-67-1	041402	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	12/14/2000	NR	Kidney & Testicular tumors in Crl:CD(SD)BR rats (M)
MON 4660	71526-07-3	600046	Likely to be Carcinogenic to Humans	12/9/1999	Q1* = 4.85 E-2 (3/4)	Liver (M & F), Stomach & Bile duct (M) tumors in Sprague Dawley rats Lung (M) and Liver & Stomach (M & F) tumors in CD-1 mice
Monosodium acid methanearsonate (MMA)	2163-80-6	013803	Not Likely to Be Carcinogenic to Humans	7/26/2000	NR	Not Applicable
MSMA-calcium salt	5902-95-4	013806	Not Likely to Be Carcinogenic to Humans	12/14/2000	NR	Not Applicable
Myclobutanil	88671-89-0	128857	Group E--Evidence of Non-carcinogenicity for Humans	6/16/1994	NR	Not Applicable
NAA potassium salt	15165-79-4	056003	Not Likely To Be Carcinogenic To Humans	3/14/2012	NR	Not applicable.
Naled	300-76-5	034401	Group E--Evidence of Non-carcinogenicity for Humans	8/31/1994	NR	Not Applicable
Napropamide	15299-99-7	103001	Not Likely To Be Carcinogenic To Humans	7/7/2005	NR	Not Applicable
Naptalam Sodium Salt	132-67-2	030703	Group D--Not Classifiable as to Human Carcinogenicity	9/7/1994	NR	Not Applicable
Napthalene Acetates	2122-70-5	056008	Not Likely To Be Carcinogenic To Humans	3/5/2009	NR	Not applicable.
Nicosulfuron	111991-09-4	129008	Group E--Evidence of Non-carcinogenicity for Humans	9/1/1998	NR	Not Applicable
Nitrapyrin	1929-82-4	069203	Suggestive Evidence Of Carcinogenic Potential	3/1/2012	RfD Approach	Mouse B6C3F1 (M & F) Liver
Norflurazon	27314-13-2	105801	Group C--Possible Human Carcinogen	11/2/1990	NR	Liver tumors in CD-1 mice (M)

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Novaluron	116714-46-6	124002	Not Likely to Be Carcinogenic to Humans	2/4/2004	NR	Not Applicable
Orthophenylphenol (see also PC 064104)	90-43-7	064103	Not Likely to Be Carcinogenic to Humans (quantification of cancer risk is not required since the NOAEL selected for the chronic Reference Dose would address the concerns for the precursor events leading to development of bladder and liver tumors)	10/12/2005	NR	Urinary bladder tumors in rats and liver tumors in mice; Established a cytotoxic mode of action involving oxidative damage to cells and subsequent regenerative hyperplasia for bladder tumors in rats.
Orthophenylphenol, Sodium salt (see also PC 064103)	132-27-4	064104	Not Likely to Be Carcinogenic to Humans (quantification of cancer risk is not required since the NOAEL selected for the chronic Reference Dose would address the concerns for the precursor events leading to development of bladder and liver tumors)	10/12/2005	NR	Urinary bladder tumors in rats and liver tumors in mice; Established a cytotoxic mode of action involving oxidative damage to cells and subsequent regenerative hyperplasia for bladder tumors in rats.
Orthosulfamuron	213464-77-8	108209	Suggestive Evidence of Carcinogenic Potential	10/26/2006	RfD Approach	Thyroid tumors in Han Wistar rats (M)
Oryzalin	19044-88-3	104201	Likely to be Carcinogenic to Humans	6/25/2003	Q1* = 7.79 E-3 (3/4)	Thyroid & Skin (M & F) and Mammary (F) tumors in F344 rats
Oxadiazon	19666-30-9	109001	Likely To Be Carcinogenic To Humans	5/1/2001	Q1* = 7.11 E-2 (3/4)	Liver tumors in F344 rats (M) Liver tumors in CD-1 mice (M & F)
Oxadixyl	77732-09-3	126701	Group C--Possible Human Carcinogen	1/4/1989	Q1* = 5.3 E-2 (2/3)	Liver tumors in Han-Wistar rats (M & F)
Oxamyl	23135-22-0	103801	Group E--Evidence of Non-carcinogenicity for Humans	11/5/1996	NR	Not Applicable
Oxydemeton-methyl	301-12-2	058702	Not Likely to Be Carcinogenic to Humans	7/24/1997	NR	Not Applicable
Oxyfluorfen	42874-03-3	111601	Likely To Be Carcinogenic To Humans	4/20/2010	Q1* = 7.32 E-2 (3/4)	Liver tumors in CD-1 mice (M)

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Oxytetracycline	2058-46-0	006308	Group D--Not Classifiable as to Human Carcinogenicity	12/18/1992	NR	Not Applicable
Oxythioquinox	2439-01-2	054101	Group B--Probable Human Carcinogen	2/15/1996	Q1* = 3.42 E-2 (3/4)	Kidney & Liver tumors in F344 rats (M & F) Lung tumors in NMRI mice (M)
Paclobutrazol	76738-62-0	125601	Group D--Not Classifiable as to Human Carcinogenicity	6/23/1994	NR	Not Applicable
Paradichlorobenzene	106-46-7	061501	Not Likely To Be Carcinogenic To Humans	6/5/2007	NR	Liver tumors in B6C3F1 mice (M & F); Established a mitogenic mode of action for liver tumors.
Paranitrophenol	100-02-7	056301	Group D--Not Classifiable as to Human Carcinogenicity	5/14/1996	NR	Not Applicable
Paraquat dichloride	1910-42-5	061601	Group E--Evidence of Non-carcinogenicity for Humans	4/19/2000	NR	Not Applicable
Parathion, ethyl-	56-38-2	057501	Group C--Possible Human Carcinogen	9/11/1991	RfD Approach	Adrenal, Thyroid & Pancreas tumors in Osborne-Mendel rats (M) Pancreas tumors in Wistar rats (M)
Pebulate	1114-71-2	041403	Not Likely to Be Carcinogenic to Humans	12/7/1998	NR	Not Applicable
Pendimethalin	40487-42-1	108501	Group C--Possible Human Carcinogen	7/24/1992	RfD Approach	Thyroid tumors in Sprague-Dawley rats (M & F)
Penflufen	494793-67-8	100249	Suggestive Evidence Of Carcinogenic Potential	3/30/2011	RfD Approach	Wistar Rat Hematopoietic System and Brain (M); Wistar Rat Ovaries (F)
Penoxulam	219714-96-2	119031	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	3/24/2004	NR	Mononuclear Cell Leukemia in Fisher 344 rats (M)
Pentachloronitrobenzene (PCNB)	82-68-8	056502	Group C--Possible Human Carcinogen	12/18/1992	RfD Approach	Thyroid tumors in CD rats (M)
Pentachlorophenol	87-86-5	063001	Group B--Probable Human Carcinogen	1/3/1991	Not Determined	Liver & Vascular (M & F) and Adrenal (M) tumors in B6C3F1 mice
Penthiopyrad	183675-82-3	090112	Suggestive Evidence Of Carcinogenic Potential	10/18/2011	RfD Approach	Liver tumors in CD-1 mice (M)
Permethrin	52645-53-1	109701	Likely to be Carcinogenic to Humans	10/23/2002	Q1* = 9.567 E-3 (3/4)	Lung (F) & Liver (M & F) tumors in CD-1 mice
Phenmedipham	13684-63-4	098701	Group D--Not Classifiable as to Human Carcinogenicity	4/28/1993	NR	Not Applicable

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PHMB	32289-58-0	111801	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	07/16/2003	NR	Vascular tumors in Wistar rats (F) & C5B1/10JfCD-1/Alpk mice (M & F) following oral exposure; Vascular tumors in Alderley Park mice (F) following dermal exposure
Phorate	298-02-2	057201	Group E--Evidence of Non-carcinogenicity for Humans	12/30/1993	NR	Not Applicable
Phosalone	2310-17-0	097701	Not Likely to Be Carcinogenic to Humans	8/12/1999	NR	Not Applicable
Phosmet	732-11-6	059201	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	10/27/1999	NR	Liver (M & F) & Mammary (F) tumors in B6C3F1 mice
Phosphamidon	13171-21-6	018201	Group C--Possible Human Carcinogen	5/31/1989	NR	Bladder & Liver tumors in Sprague-Dawley rats (M)
Phostebupirim	96182-53-5	129086	Group E--Evidence of Non-carcinogenicity for Humans	4/27/1993	NR	Not Applicable
Picloram Acid	1918-02-1	005101	Group E--Evidence of Non-carcinogenicity for Humans	4/1/1994	NR	Not Applicable
Picloram Acid Ethylhexyl Ester	26952-20-5	005103	Group E--Evidence of Non-carcinogenicity for Humans	4/1/1994	NR	Not Applicable
Picloram Acid Potassium Salt	2545-60-0	005104	Group E--Evidence of Non-carcinogenicity for Humans	4/1/1994	NR	Not Applicable
Picloram Acid Triisopropanolamine Salt	6753-47-5	005102	Group E--Evidence of Non-carcinogenicity for Humans	4/1/1994	NR	Not Applicable
Picoxystrobin	117428-22-5	129200	Suggestive Evidence Of Carcinogenic Potential	11/15/11	NR	Rat Crl:CD (BR) Testes (M)
Pinoxaden	243973-20-8	147500	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	5/18/2005	NR	Not Applicable
Piperonyl butoxide	51-03-6	067501	Group C--Possible Human Carcinogen	6/7/1995	RfD and MOE Approaches	Liver tumors in CD-1 mice (M & F)
Pirimicarb	23103-98-2	106101	Likely to be Carcinogenic to Humans	7/13/2005	Q1* = 3.526 E -2 (3/4)	Tumors at multiple sites (Liver and Lung in M & F; Ovary and Mammary in F) in Swiss mice Lung tumors in CD-1 mice (F)
Pirimiphos-methyl	29232-93-7	108102	Cannot Be Determined	1/29/1998	NR	Not Applicable

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Polymeric Betaine	214710-34-6	103679	Inadequate Information to Assess Carcinogenic Potential	10/3/2006	NR	Not Applicable
Potassium dichromate	7778-50-9	068302	See Hexavalent Chromium (CrVI)	07/01/2009		
Prallethrin	23031-36-9	128722	Not Likely to Be Carcinogenic to Humans	6/27/2003	NR	Not Applicable
Primisulfuron-methyl	86209-51-0	128973	Group D--Not Classifiable as to Human Carcinogenicity	5/3/1990	NR	Not Applicable
Prochloraz	67747-09-5	128851	Group C--Possible Human Carcinogen	7/1/1988	Q1* = 1.5 E-1 (2/3)	Liver tumors in CD-1mice (M & F)
Procymidone	32809-16-8	129044	Group B--Probable Human Carcinogen	4/5/1991	Q1* = 1.339 E-2 (3/4)	Testes & Pituitary tumors in Osborne-Mendel rats (M & F) Liver tumors in B6C3F1 mice (F)
Prodiamine	29091-21-2	110201	Group C--Possible Human Carcinogen	6/10/1991	RfD Approach	Thyroid & Pancreas tumors in Sprague- Dawley rats (M & F) Fibrosarcomas in CD-1 mice (M)
Profenofos	41198-08-7	111401	Group E--Evidence of Non-carcinogenicity for Humans	2/6/1996	NR	Not Applicable
Prohexadione	127277-53-6	112600	Not Likely to Be Carcinogenic to Humans	4/14/2000	NR	Not Applicable
Prometon	1610-18-0	080804	Group D--Not Classifiable as to Human Carcinogenicity	11/25/1992	NR	Not Applicable
Prometryn	7287-19-6	080805	Group E--Evidence of Non-carcinogenicity for Humans	7/26/1994	NR	Not Applicable
Pronamide	23950-58-5	101701	Group B--Probable Human Carcinogen	12/10/2001	Q1* = 2.59 E-2 (3/4)	Testes (M) & Thyroid (M & F) tumors in Crl:CD(SD)BR rats Liver tumors B6C3F1 mice (M)
Propachlor	1918-16-7	019101	Likely to be Carcinogenic to Humans	10/16/1997	Q1* = 3.2 E-2 (3/4)	Stomach (M) tumors in Fischer 344 rats Thyroid (M & F) & Ovary (F) tumors in Sprague-Dawley rats Liver tumors in CD-1 mice (M)
Propamocarb hydrochloride	25606-41-1	119302	Not Likely To Be Carcinogenic To Humans	5/31/2000	NR	Not Applicable

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Propanil	709-98-8	028201	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	6/19/2001	NR	Testes & Liver tumors in Sprague-Dawley rats (M)
Propargite	2312-35-8	097601	Group B--Probable Human Carcinogen	7/23/1992	Q1* = 1.92 E-1 (3/4)	Jejunum tumors in Crl:CDBR rat (M & F)
Propazine	139-40-2	080808	Not Likely to Be Carcinogenic to Humans	12/8/2005	NR	Mammary tumors in Sprague Dawley rats (F); Established a neuroendocrine mode of action for mammary tumors in rats.
Propetamphos	31218-83-4	113601	Not Likely to Be Carcinogenic to Humans	10/31/1998	NR	Not Applicable
Propiconazole	60207-90-1	122101	Group C--Possible Human Carcinogen	9/11/1992	RfD Approach	Liver tumors in CD-1 mice (M)
Propineb	12071-83-9	522200	Likely To Be Carcinogenic To Humans	2/11/2013	Q1* = 4.95 X 10E-2 based on PTU male mouse liver tumors combined	Lung in NMRI Mouse (F); Liver in SPF CF1/W74 Mouse (M & F) and CF-1 Mouse (M & F); Established Thyroid Hormone Disruption MOA for rat thyroid tumors.
Propoxur	114-26-1	047802	Group B--Probable Human Carcinogen	6/17/1996	Q1* = 3.69 E-3 (3/4)	Bladder tumors in Wistar rats (M & F) Liver tumors in B6C3F1 mice (M)
Propoxycarbazone-Sodium	181274-15-7	122019	Not Likely to Be Carcinogenic to Humans	4/6/2004	NR	Not Applicable
Proquinazid	189278-12-4	044502	Suggestive Evidence Of Carcinogenic Potential	4/24/2013	NR	Liver in Crl:CD (SD) BR Rat (F); Thyroid in Crl:CD (SD) BR Rat (M)
Prosulfuron	94125-34-5	129031	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	1/24/2000	NR	Not Applicable
Prothioconazole	178928-70-6	113961	Not Likely To Be Carcinogenic To Humans	12/31/2007	NR	Not Applicable
Pymetrozine	123312-89-0	101103	Likely to be Carcinogenic to Humans	9/22/1999	Q1* = 1.19 E-2 (3/4)	Liver tumors in Tif:RAIf(SPF) Sprague-Dawley rats (F) Liver tumors in Tif:MAGf(SPF) mice (M & F)
Pyraclostrobin	175013-18-0	099100	Not Likely to Be Carcinogenic to Humans	2/15/2007	NR	Not Applicable
Pyraflufen ethyl	129630-19-9	030090	Likely to be Carcinogenic to Humans	10/8/2002	Q1* = 3.32 E-2 (3/4)	Liver tumors in (SPF) ICR Crj CD-1 mice (M &F)
Pyrasulfotole	365400-11-9	000692	Suggestive Evidence Of Carcinogenic Potential	5/17/2007	NR	Eye tumors in Wistar rats (M) Urinary bladder tumors in C57BL mice (M & F)

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Pyrazon	1698-60-8	069601	Not Likely To Be Carcinogenic To Humans	7/28/2005	NR	Not Applicable
Pyrethrins	8003-34-7	069001	Not Likely To Be Carcinogenic To Humans at doses that do not cause mitogenic repsonse in the liver cell proliferation	2/14/2008	NR	Liver tumors in Crl:CD® (SD)IGS BR rats (F); Established a non-genotoxic mitogenic mode of action for liver tumors.
Pyridaben	96489-71-3	129105	Group E--Evidence of Non-carcinogenicity for Humans	5/11/1994	NR	Not Applicable
Pyridalyl	179101-81-6	295149	Not Likely To Be Carcinogenic To Humans	08/03/2004	NR	Not Applicable
Pyridate	55512-33-9	128834	Not Likely To Be Carcinogenic To Humans	1/24/2000	NR	Not Applicable
Pyrifluquinazon	337458-27-2	555555	Not Likely To Be Carcinogenic To Humans at levels that do not alter rodent hormone homeostasis	6/21/2012	NR	Testes in CD-1 Mouse (M) and F344/N Rat (M); Androgen Dependent MOA
Pyrimethanil	53112-28-0	288201	Group C--Possible Human Carcinogen	2/11/1997	MOE Approach	Thyroid tumors in Sprague-Dawley rats (M &F)
Pyriofenone	688046-61-9	028828	Not Likely To Be Carcinogenic To Humans	12/14/2011	NR	Not Applicable
Pyriproxyfen	95737-68-1	129032	Group E--Evidence of Non-carcinogenicity for Humans	8/15/1995	NR	Not Applicable
Pyrithiobac-sodium	123343-16-8	078905	Group C--Possible Human Carcinogen	9/5/1995	Q1* = 1.05 E-3 (3/4)	Kidney tumors in Crl:CDBR rats (M) Liver tumors in CD-1 mice (M)
Pyroxasulfone	447399-55-5	090099	Not Likely To Be Carcinogenic To Humans at doses below those that cause urinary bladder calculi formation resulting in cellular damage of the urinary tract	05/17/2011	RfD Approach	Urinary Bladder Crl:CD (SD) IGS BR Rat (M); Established a cytotoxic and regeneration proliferation mode of action for urinary bladder tumors.
Pyroxsulam	422556-08-9	108702	Not Likely To Be Carcinogenic To Humans	7/12/2007	NR	Not Applicable
Quinchlorac	84087-01-4	128974	Group D--Not Classifiable as to Human Carcinogenicity	8/26/1992	NR	Not Applicable

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Quinoxyfen	124495-18-7	055459	Not Likely to Be Carcinogenic to Humans	1/28/2003	NR	Not Applicable
Quizalofop ethyl	76578-14-8	128711	Group D--Not Classifiable as to Human Carcinogenicity	3/17/1988	NR	Not Applicable
Resmethrin	10453-86-8	097801	Likely to be Carcinogenic to Humans	5/25/2005	Q1* = 5.621 E-2 (3/4)	Liver tumors in Sprague-Dawley rats (F) Liver tumors in Swiss Mice (M)
Rimsulfuron	122931-48-0	129009	Not Likely to Be Carcinogenic to Humans	2/19/1998	NR	Not Applicable
RoteNone	83-79-4	071003	Group E--Evidence of Non-carcinogenicity for Humans	10/5/1988	NR	Not Applicable
Saflufenacil (BAS 800 H)	372137-35-4	118203	Not Likely To Be Carcinogenic To Humans	7/22/2009	NR	Not Applicable
S-Bioallethrin	28434-00-6	004004	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	12/2/2003	NR	Kidney tumors in Sprague-Dawley rats (M)
Sedaxane	874967-67-6	129223	Likely To Be Carcinogenic To Humans	5/18/2011	Q1* = 4.64 E-3 (3/4)	Wistar Rat Liver and Thyroid (M); Wistar Rat Uterus (F); CD-1 Mouse Liver (M)
Sethoxydim	74051-80-2	121001	Not Likely to Be Carcinogenic to Humans	3/19/2003	NR	Not Applicable
Simazine	122-34-9	080807	Not Likely to be Carcinogenic to Humans	4/14/2005	NR	Mammary tumors in Sprague-Dawley rats (F); Established a mode of action for neuroendocrine disruption for mammary tumors in rats.
s-Metolachlor	87392-12-9	108800	Group C--Possible Human Carcinogen	9/28/2001	MOE Approach	Liver tumors in Charles River CD (SD)BR rats (F)
Sodium bentazon	50723-80-3	103901	Group E--Evidence Of Non-Carcinogenicity For Humans	1/14/1992	NR	Not Applicable
Sodium omadine	15922-78-8	088004	Group D--Not Classifiable as to Human Carcinogenicity	5/16/1995	NR	Not Applicable
Solatenol	1072957-71-1	122305	Suggestive Evidence Of Carcinogenic Potential	9/24/2014	NR	Brain Han Wistar Rat (M); The CARC concluded that a non-genotoxic mode of action (MOA) for thyroid tumors observed in male rats has been established as a result of upregulation of UDPGT, increased clearance of T3 and T4 hormones and increased TSH levels, resulting in increased thyroid cell proliferation, which progress to form thyroid tumors.

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Spinetoram	187166-40-1 + 187166-15-0	110008	Not Likely To Be Carcinogenic To Humans	9/20/2007	NR	Not Applicable
Spinosad	131929-60-7	110003	Not Likely to Be Carcinogenic to Humans	7/18/2002	NR	Not Applicable
Spirodiclofen	148477-71-8	124871	Likely to be Carcinogenic to Humans	6/10/2004	Q1* = 1.49 E-2 (3/4)	Testes (M) & Uterine (F) tumors in Wistar rats Liver tumors in CD-1 mice (M & F)
Spiromesifen	283594-90-1	024875	Not Likely To Be Carcinogenic To Humans	5/21/2008	NR	Not Applicable
Spirotetramat	203313-25-1	392201	Not Likely To Be Carcinogenic To Humans	3/26/2009	NR	Not Applicable
Spiroxamine	118134-30-8	120759	Not Likely to Be Carcinogenic to Humans	11/14/2003	NR	Not Applicable
Sulfentrazone	122836-35-5	129081	Group E--Evidence of Non-carcinogenicity for Humans	5/7/1996	NR	Not Applicable
Sulfosate	81591-81-3	128501	Group E--Evidence of Non-carcinogenicity for Humans	7/26/1994	NR	Not Applicable
Sulfosulfuron	141776-32-1	085601	Not Likely to be Carcinogenic to Humans at doses that do not cause crystals with subsequent calculi formation resulting in cellular damage of the urinary tract.	12/16/2008	NR	Urinary bladder tumors seen in female rats and male mice; Established cytotoxic and regeneration proliferation mode of action for urinary bladder tumors.
Sulfoxaflor	946578-00-3	005210	Suggestive Evidence Of Carcinogenic Potential	4/26/12	RfD Approach	Rat F344/N (M) Preputial Gland; Acceptable Mitogenic MOA for male rat liver tumors.
Sulfuryl fluoride	2699-79-8	078003	Not Likely to Be Carcinogenic to Humans	5/24/2001	NR	Not Applicable
Sulprofos	35400-43-2	111501	Group E--Evidence of Non-carcinogenicity for Humans	3/26/1996	NR	Not Applicable
Sumithrin	26002-80-2	069005	Not Likely to Be Carcinogenic to Humans	5/30/2006	NR	Not Applicable
Tau-fluvalinate	102851-06-9	109302	Not Likely To Be Carcinogenic To Humans	9/29/2005	NR	Not Applicable
TCMTB (Busan 72)	21564-17-0	035603	Group C--Possible Human Carcinogen	8/28/1996	RfD Approach	Testes (M) & Thyroid (F) tumors in Sprague-Dawley rats

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Tebuconazole	107534-96-3	128997	Group C--Possible Human Carcinogen	9/15/1993	RfD Approach	Liver tumors in NMRI mice (M & F)
Tebufenozide	112410-23-8	129026	Group E--Evidence of Non-carcinogenicity for Humans	8/29/1994	NR	Not Applicable
Tebufenpyrad	119168-77-3	090102	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	7/15/2002	NR	Liver tumors in F344 rats (M & F)
Tebuthiuron	34014-18-1	105501	Group D--Not Classifiable as to Human Carcinogenicity	3/1/1993	NR	Not Applicable
Tefluthrin	79538-32-2	128912	Not Likely To Be Carcinogenic To Humans	5/30/2012	NR	Not Applicable; NA
Telone	542-75-6	029001	Group B--Probable Human Carcinogen	3/19/2002	Q1* = 1.3 E-5 (3/4) (Inhalation)	Tumors at multiple sites (Forestomach, Liver, Mammary, Thyroid, Adrenal, Urinary, Lung) in Fischer 344 rats & B6C3F1 mice (M & F)
Tembotrione	335104-84-2	012801	Suggestive Evidence of Carcinogenic Potential	5/22/2007	RfD Approach	Eye tumors in Wistar rats (M)
Tepraloxydim	149979-41-9	121005	Data Are Inadequate for an Assessment of Human Carcinogenic Potential	2/27/2001	NR	Not Applicable
Terbacil	5902-51-2	012701	Group E--Evidence of Non-carcinogenicity for Humans	9/30/1994	NR	Not Applicable
Terbufos	13071-79-9	105001	Group E--Evidence of Non-carcinogenicity for Humans	3/9/1994	NR	Not Applicable
Terbuthylazine	5915-41-3	080814	Group D--Not Classifiable as to Human Carcinogenicity	8/24/1994	NR	Not Applicable
Terbutryn	886-50-0	080813	Group C--Possible Human Carcinogen	3/3/1988	NR	Tumors at multiple sites (Mammary, Liver, Thyroid, Testes in CD rats (M & F)
Terrazole	2593-15-9	084701	Group B--Probable Human Carcinogen	6/29/1999	Q1* = 3.33 E-2 (3/4)	Tumors at multiple sites (Liver, Bile duct, Mammary, Thyroid,Testes) in Sprague-Dawley rats (M & F)
Tetrachlorvinphos	961-11-5	083701	Likely to be Carcinogenic to Humans	3/7/2002	Q1* = 1.83 E-3 (3/4)	Adrenal & Thyroid tumors in Sprague-Dawley rats (M) Liver tumors; B6C3F1 mice (F)

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Tetraconazole	112281-77-3	120603	Not Likely To Be Carcinogenic To Humans at levels that do not cause increased cell proliferation in the liver	4/2/2013	NR	Liver tumors in Crl:CD-1 (ICR) mice (M &F); Accepted Mitogenesis as MOA for mice liver tumors.
Tetramethrin	7696-12-0	069003	Group C--Possible Human Carcinogen	12/11/1989	NR	Testes tumors in CR CD-1 rats, Sprague-Dawley rats & Long-Evans Hooded rats (M)
Thiabendazole	148-79-8	060101	Likely to be Carcinogenic to Humans at High Does; Not Likely to be Carcinogenic to Humans at Low Doses	3/8/2002	MOE Approach	Thyroid tumors in Sprague-Dawley Crl:CD BR rats (M & F); Established a hormonal mode of action for thyroid tumors.
Thiacloprid	111988-49-9	014019	Likely to be Carcinogenic to Humans	10/31/2012	Q1* = 4.06 E-2 (3/4)	Thyroid (M & F) & Uterine (F) tumors in Wistar rats Ovarian tumors in B6C3F mice (F)
Thiamethoxam	153719-23-4	060109	Not Likely to Be Carcinogenic to Humans	6/13/2005	NR	Liver tumors in Tif:MAGf (SPF) mice (M &F); Established a cytotoxic, regenerative proliferative, non-genotoxic mode of action for liver tumors in mice.
Thiazopyr (MON 13200)	117718-60-2	129100	Suggestive Evidence Of Carcinogenic Potential	12/6/2007	NR	Kidney tumors in Sprague Dawley rats (M & F))
Thidiazuron	51707-55-2	120301	Not Likely To Be Carcinogenic To Humans	8/31/2005	NR	Not Applicable
Thiencarbazone-methyl	317815-83-1	015804	Not Likely To Be Carcinogenic To Humans at doses that do not cause urothelium cytotoxicity	2/29/2008	NR	Urinary bladder tumors in C57BL/6J mice (M &F); Established a cytotoxic and regeneration proliferation mode of action for urinary bladder tumors in mice.
Thifensulfuron methyl	79277-27-3	128845	Not Likely To Be Carcinogenic To Humans	12/12/2006	NR	Not Applicable
Thiobencarb (Bolero)	28249-77-6	108401	Group D--Not Classifiable as to Human Carcinogenicity	6/10/1996	NR	Not Applicable
Thiocyclam hydrogen oxalate	31895-22-4	128868	Group D--Not Classifiable as to Human Carcinogenicity	9/15/1994	NR	Not Applicable
Thiodicarb	59669-26-0	114501	Group B--Probable Human Carcinogen	6/10/1996	MOE Approach	Testes tumors in Sprague-Dawley rat (M) Liver tumors in CD-1 mice (M & F)
Thiophanate-methyl	23564-05-8	102001	Likely to be Carcinogenic to Humans	8/24/1999	Q1* = 1.16 E-2 (3/4)	Thyroid tumors in F344 rats (M &F) Liver tumors in CD-1 mice (M & F)
Thiram	137-26-8	079801	Not Likely to Be Carcinogenic to Humans	4/14/2003	NR	Not Applicable

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Tolclofos-methyl	57018-04-9	128905	Not Required (nonfood)	3/22/2012	NR	Not Applicable
Tolfenpyrad	129558-76-5	090111	Not Likely To Be Carcinogenic To Humans	06/03/2010	NR	Not Applicable
Tolyfluanid	731-27-1	309200	Likely to be Carcinogenic to Humans	6/18/2002	Q1* = 1.59 E-3 (3/4)	Thyroid tumors in Wistar rats (M & F)
Topramezone	210631-68-8	123009	Not Likely to be Carcinogenic to Humans at Doses that Do Not Alter Rat Thyroid Hormone Homeostasis	5/19/2005	NR	Thyroid tumors in Wistar rats (M & F); Established a hormonal mode of action for thyroid tumors observed only at an excessive dose.
Tralkoxydim	87820-88-0	121000	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	6/30/2004	NR	Testicular tumors in Wistar rats (M) Ovarian tumors in Syrian Golden hamsters (F)
Triadimefon	43121-43-3	109901	Group C--Possible Human Carcinogen	12/4/1996	RfD Approach	Thyroid tumors in Wistar rats (M) Liver tumors in NMRI mice (M & F)
Triadimenol	55219-65-3	127201	Group C--Possible Human Carcinogen	1/29/1988	NR	Liver tumors in CF1/W74 mice (F)
Triallate	2303-17-5	078802	Group C--Possible Human Carcinogen	1/12/1994	Q1* = 7.17 E-2 (3/4)	Kidney tumors in Sprague-Dawley rats (M) Liver tumors in B6C3F1 mice (F)
Triasulfuron	82097-50-5	128969	Group E--Evidence of Non-carcinogenicity for Humans	2/27/1991	NR	Not Applicable
Triazamate	112143-82-5	128100	Not Likely to Be Carcinogenic to Humans	12/1/1997	NR	Not Applicable
Tribenuron methyl	101200-48-0	128887	Group C--Possible Human Carcinogen	7/14/1989	NR	Mammary tumors in Sprague-Dawley rats (F)
Tribufos	78-48-8	074801	Likely to be Carcinogenic to Humans (High Doses); Not Likely to be Carcinogenic to Humans (Low Doses)	5/22/1997	MOE Approach.	Liver (M), Lung (F), & Small intestine (M & F) tumors in CD-1 mice
Tributyltin maleate	14275-57-1	083118	Group D--Not Classifiable As To Human Carcinogenicity	3/31/2005	NR	Not Applicable
Trichlorfon	52-68-6	057901	Likely to be Carcinogenic to Humans (High Doses), Not Likely to be Carcinogenic to Humans (Low Doses)	7/15/1999	NR	Kidney & Lung tumors in Fischer 344 rats (M & F) Mammary tumors in CD-1 mice (F)

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Triclopyr	55335-06-3	116001	Group D--Not Classifiable as to Human Carcinogenicity	5/9/1996	NR	Not Applicable
Triclosan	3380-34-5	054901	Not Likely To Be Carcinogenic To Humans	1/4/2008	NR	Liver tumors in CD-1 mice (M & F); Established a PPARa mode of action for liver tumors.
Tricyclazole	41814-78-2	120201	Not Likely to be Carcinogenic to Humans	4/1/2014	NR	Not Applicable
Tridiphane	58138-08-2	123901	Group C--Possible Human Carcinogen	4/22/1986	NR	Liver tumors in B6C3F1 mice (F)
Trifloxystrobin	141517-21-7	129112	Not Likely to Be Carcinogenic to Humans	6/16/1999	NR	Not Applicable
Trifloxysulfuron	290332-10-4	119009	Not Likely to Be Carcinogenic to Humans	7/22/2003	NR	Not Applicable
Triflumizole	68694-11-1	128879	Group E--Evidence of Non-carcinogenicity for Humans	8/10/1993	NR	Not Applicable
Trifluralin	1582-09-8	036101	Group C--Possible Human Carcinogen	4/11/1986	Q1* = 2.93 E-3 (3/4)	Thyroid, Renal pelvis & Urinary bladder tumors in Fischer 344 rats (F)
Triflusulfuron-methyl	126535-15-7	129002	Group C--Possible Human Carcinogen	5/28/1996	RfD Approach	Testes tumors in CD-1 rats (M)
Triforine	26644-46-2	107901	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	6/29/2004	NR	Liver (M) & Lung (F) tumors in Crl:CD-1 mice
Trinexapac-Ethyl	95266-40-3	112602	Not Likely To Be Carcinogenic To Humans	9/5/2008	NR	Not Applicable
Triphenyltin hydroxide (TPTH)	76-87-9	083601	Group B--Probable Human Carcinogen	5/24/1990	Q1* = 1.83 E-0 (3/4)	Pituitary & Leydig cell tumors in Wistar rats (M &F) Liver tumors in NMRI mice (M &F)
Triticonazole	131983-72-7	125620	Not Likely to be Carcinogenic to Humans	6/15/2006	NR	Not Applicable
Troysan polyphase (IPBC)	55406-53-6	107801	Not Likely to Be Carcinogenic to Humans	12/4/1996	NR	Not Applicable
UDMH	57-14-7	600018	Group B--Probable Human Carcinogen	7/26/1991	Q1* = 4.6 E-1 (2/3)	Multiple tumors (Lung, Blood vessels, Liver, Kidney) in multiple species, strains & studies.
UMP-488 (PAL 6000)	111578-32-6	129025	Group E--Evidence of Non-carcinogenicity for Humans	5/6/1994	NR	Not Applicable
Uniconazole	83657-22-1	128976	Group C--Possible Human Carcinogen	10/11/1990	NR	Liver tumors in CD-1 mice (M)
Vinclozolin	50471-44-8	113201	Group C--Possible Human Carcinogen	6/20/2000	MOE Approach	Leydig cell tumors in Wistar rats (M)

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Zeta-Cypermethrin	52315-07-8	129064	Group C--Possible Human Carcinogen	9/27/1988	NR	Lung tumors in Alderly Park SPF Swiss strain mice (F)
Ziram	137-30-4	034805	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential	2/6/2003	NR	Hemangiomas in CD(SD)BR rats (M); Preputial gland tumors in F344 rats (M)
Zoxamide	156052-68-5	101702	Not Likely to Be Carcinogenic to Humans	2/7/2001	NR	Not Applicable